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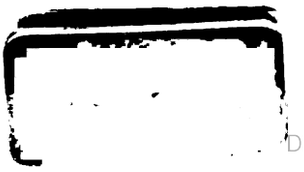
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RECORDS OF THE SURVEY OF INDIA
VOL. XIX

THE MAGNETIC SURVEY OF INDIA
1901-20.

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RECORDS

OF THE

SURVEY OF INDIA

Volume XIX

THE MAGNETIC SURVEY OF INDIA

1901-20.

PREPARED BY

Lt.-Col. R. H. THOMAS, D.S.O., R.E.,

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PUBLISHED BY ORDER OF

Colonel Commandant E. A. TANDY, R.E.,

SURVEYOR GENERAL OF INDIA.

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PREFACE

THE present volume contains the results of the Magnetic Survey of India and Ceylon, reduced to the two epochs 1909·0 and 1920·0.

As the bulk of the observations were made between the year 1902 and 1913, a word of explanation is necessary to explain the somewhat belated publication of these records.

The reduction of the Declination data had been commenced in 1913 but the method of dealing with the Horizontal Force observations had presented many difficulties on account of variations in Instrumental differences which had been under investigation for some years, details of which are to be found in the Survey of India annual reports of the period.

In the spring of 1914 a Committee was assembled to consider inter alia the methods to be used in the reduction; their report is given on pp. 117-121 of this volume. The Committee decided to adopt the epoch 1909·0 and outlined a method of reduction, which with slight modifications has been adopted; they also roughly estimated the average and extreme errors of reduction which might result from the adoption of these methods, but it is satisfactory to be able to add that further investigation has considerably reduced their estimates (p. 58 "Accuracy of Results").

In the autumn of 1914, the writer, who was then in charge of the Magnetic Survey, had just completed his investigation of the Instrumental differences in Horizontal Force for the field instruments, and had commenced the final determination of the observatory base lines, but in October 1914 he, together with the greater number of the military officers of the Survey, was recalled to military duty.

During the continuance of the war, the depleted staff of the Survey remaining in India was almost exclusively employed on topographical surveys, and very little progress could be made with the reduction of the magnetic work. On the writer's return to India late in 1919, the question of instrumental constants was reopened, in the light of the additional data accumulated during the years 1914-19, and various discrepancies were adjusted; the work at five observatories was also recomputed and the base lines finally determined. In 1920, when the writer was officiating Superintendent of the Trigonometrical Survey, it was decided, in view of the delay that had occurred, to bring the Survey more up to date by reducing to a second and later epoch 1920·0, by means of the observations at a much larger number of repeat stations than were available for the previous reduction to 1909·0.

It was recognized that this would mean further delay in publication but it was considered that this would be justified.

2. *Personnel employed on the Magnetic Survey.*

Captain H. A. D. Fraser R.E. (now Colonel C.B. retired) in charge 1900-05.
Captain (now Lt.-Colonel) R. H. Thomas R.E. attached 1903-05, in charge 1905-8, 1909-10, 1911-1914.
Captain (now Lt.-Colonel) H. J. Couchman R.E. attached 1906-8, in charge 1908-9.
Lieutenant (now Major) H. T. Morshead R.E. attached 1909-10, in charge 1910-11.
Mr. E. C. J. Bond attached 1905-10, in charge 1914-23.
Mr. H. P. D. Morton attached 1902-12.
Mr. R. P. Ray attached 1901-18.
Mr. A. M. Talati attached 1902-05.
Mr. E. A. Meyer attached 1902-07.
Mr. N. R. Mazumdar attached 1902-23.
Mr. R .B. Mathur B.A. attached 1907-16, 1917, 1919-20.
Mr. K. N. Mukerji M.A. Magnetic Observer 1902 (now in charge of the Dehra Dūn Magnetic Observatory).

Whatever success the Magnetic Survey of India has attained is largely due to Captain H. A. D. FRASER R.E.; he inaugurated the work on sound lines and the methods laid down by him have been modified only in unimportant details. He also designed the Survey pattern magnetometer, which has been adopted in several other countries.

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Acknowledgments are due also to the late Sir ARTHUR RÜCKER F.R.S., Dr. C. CHREE F.R.S., Sir A. WATSON F.R.S. and Dr. L. A. BAUER of the Carnegie Institute of Terrestrial Magnetism for much helpful encouragement and advice.

3. *Preparation of this Volume.* The report in Part I was written by Mr. E. C. J. Bond who is also responsible for the preparation of the Tables and Charts. Mr. N. R. MAZUMDAR was responsible, under the direction of Mr. BOND, for the work of reduction.

Messrs. S. K. MUKERJI and SHYAM NARAYAN B. Sc., supervised the printing. The examination of proofs was carried out in a very thorough manner by Mr. K.N. MUKERJI M.A.

R. H. THOMAS,
Lieut.-Colonel. R.E.,
Superintendent, Survey of India.

DEHRA DUN,
1st November, 1925.

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PART I

THE MAGNETIC SURVEY: HISTORY, INSTRUMENTS, OBSERVATIONAL PROCEDURE AND METHODS OF REDUCTION

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INTRODUCTION

A Magnetic Survey of India was proposed in 1896 by Sir John Eliot, Meteorological Reporter to the Government of India, and General C. Strahan, R.E., Surveyor General of India, and was recommended by the Astronomer Royal Mr. (now Sir) W. H. M. Christie and by Sir J. Norman Lockyer, both of whom visited India in 1898, in connection with the total eclipse of the sun which took place in January of that year.

The Observatories Committee of the Royal Society attached great importance to the suggestion and approved of a magnetic survey being undertaken. There was at first some uncertainty as to whether the Meteorological Department or the Survey of India should conduct the operations. It was eventually decided that the work should be carried out by the Survey of India.

Captain H. A. D. Fraser, R.E., of the Survey of India, was deputed to Europe to consult Professor Rücker in regard to the preliminary details connected with the survey and the purchase of necessary instruments. Soon after his return to India, on completion of the necessary arrangements, the field work of the Magnetic Survey was begun in November 1901.

This is the first Magnetic Survey which embraces the whole of India, including Burma and Ceylon. It consists firstly of a general survey and secondly of a detail survey of several magnetically disturbed localities.

The aim of the general survey has been to determine the three magnetic elements—Declination, Dip and Horizontal Force, at stations uniformly distributed at distances of 30 to 40 miles apart over the whole of India, Burma and Ceylon, and to obtain from these the actual course of the true isomagnetic lines. Abnormal values of the elements at many sites in the general survey have indicated localities which are influenced by magnetic disturbing forces.

Detail surveys have been carried out over some areas in which local disturbances were revealed by the observations at the stations of the general survey.

The present publication of the results of the magnetic observations of the general survey carried out during the period 1901 to 1920 gives the values of the magnetic elements at each station, corrected for normal diurnal variation, short lived disturbances and secular change, and reduced to the epochs 1909-0 and 1920-0.

The values of each of the elements have been carefully plotted on a map of India and the lines of equal Declination, Dip, Horizontal Force and Total Force have been drawn to conform as closely as possible to the plotted values. These lines depict the actual magnetic conditions of the country and represent the true course of the isomagnetics as obtained from actual observations corrected as above and reduced to epoch. No attempt has been made to smooth out the sinuosities of the true isomagnetics, or to determine the "Terrestrial isomagnetic lines" which are usually smooth mathematical curves based on empirical formulæ.

The published results consist of:—

1. Tables of the Declination, Horizontal Force and Dip at four observatories, 80 repeat stations and 1345 field stations of the general survey, and of the average annual changes in the elements for each observatory and station of observation for 1902-09 1909-15, and 1915-20.
2. Tables of the Total Force and the three Rectangular components.
3. Tables of the monthly mean values and monthly normal values of Declination, Dip and Horizontal Force.
4. Descriptions of all the Repeat Stations.
5. Charts showing the plotted monthly mean values of the three elements at the observatories, and the lines of average annual change.
6. Charts showing the true lines of equal Declination, Dip, Horizontal Force and Total Force, for the epochs 1909-0 and 1920-0, and lines of equal annual change.
7. An Index Chart of the Magnetic Survey showing the positions of the present magnetic observatories, Repeat and Field Stations and the disturbed areas.

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8. Two charts showing the division of the couutry into regions for the purpose of interpolating the disturbance and diurnal inequality corrections for Field stations from the records of the observatories.
9. Tables showing the constants of the observatory and field instruments.

Complete reports by No. 18 Party (Magnetic), of the yearly progress of the magnetic survey since its inception, have been published in the annual volumes of the Records of the Survey of India from which full information regarding the observatories and the field operations etc., may be obtained. It is only necessary, in the present publication, to give a short account of the work, with descriptions of the magnetic observatories; of the instruments used; of the procedure in the field, with brief particulars of the methods of observing; distribution of the Repeat and Field stations; of the reduction of the observations to epoch and of the tables and charts which accompany this volume.

A reference may here be made to an earlier attempt to make a magnetic survey, recorded in "De Schlagintweit's India and High Asia"—Vol. I, "Astronomical and Magnetic Observations". It can scarcely be called a magnetic survey of India, since the stations of observation were few and far between and irregularly distributed, most of them being grouped together in a few localities in the Himalayas, others sparsely scattered along the West Coast, with two or three isolated stations on the East Coast, and in the interior. Owing to the insufficiency of the data, the uncertainty in the position of stations, and the rapid magnetic changes which have occurred in so large an area of country as India during the lapse of over half a century, it is not possible to attempt a comparison of the results obtained by De Schlagintweit with those of the present survey.

OBSERVATORIES.

The five magnetic observatories which constitute the Base Stations of the Magnetic Survey are:—Dehra Dūn, Kodaikānal, Barrackpore, Toungoo and Colāba (Bombay). The number of the observatories was decided upon by Sir Arthur Rücker and the Indian Committee of the Royal Society. The last named observatory is under the Meteorological Department and was in existence since 1840: in 1904 the magnetic part of the observatory was moved to Alibāg on the mainland across the Bombay Harbour about 18 miles south-south-east of Colaba, in consequence of the introduction of electric trams in the vicinity of the old site. The Director of the Bombay observatories has very kindly supplied this Department with the magnetic data of the Colāba and Alibāg observatories and these have been utilized in the reduction of the field observations to epoch.

The remaining four observatories, under the control of the Magnetic Survey, commenced working on the following dates:—

Dehra Dūn	...	...	... March	1902.
Kodaikānal	...	...	... August	1902.
Barrackpore	...	...	... August	1903.
Toungoo	...	...	... December	1904.

It was originally intended that these base stations should all be in working order before the commencement of the field work but owing to the unforeseen delays this ideal was not attained.

The equipment of the four observatories, when they were first started, consisted of Declination and Horizontal Force magnetographs designed by Professor W. Watson. When the scheme of the survey was first considered it was believed that Vertical Force magnetographs would be available at Colāba and Alipur (Calcutta) and that these would suffice for the reduction of Dip observations in India, but when Alipur was found to be unsuitable for a base station the observatory at Barrackpore, to the north of Calcutta, was built and later on it was considered desirable to install a set of Vertical Force magnetographs at each of the four base stations. These were made by the Cambridge Scientific Instrument Co. according to Professor Watson's design.

The Barrackpore observatory was closed in 1915 for reasons given in pages 7 & 8.

Magnetographs.

The Declination, Horizontal Force and Vertical Force magnetographs in use at the four survey base station differ in some respects from those in use at Kew though they embody the same general principles in recording the variation in the magnetic declination and the changes in the horizontal and vertical components of the Total Force.

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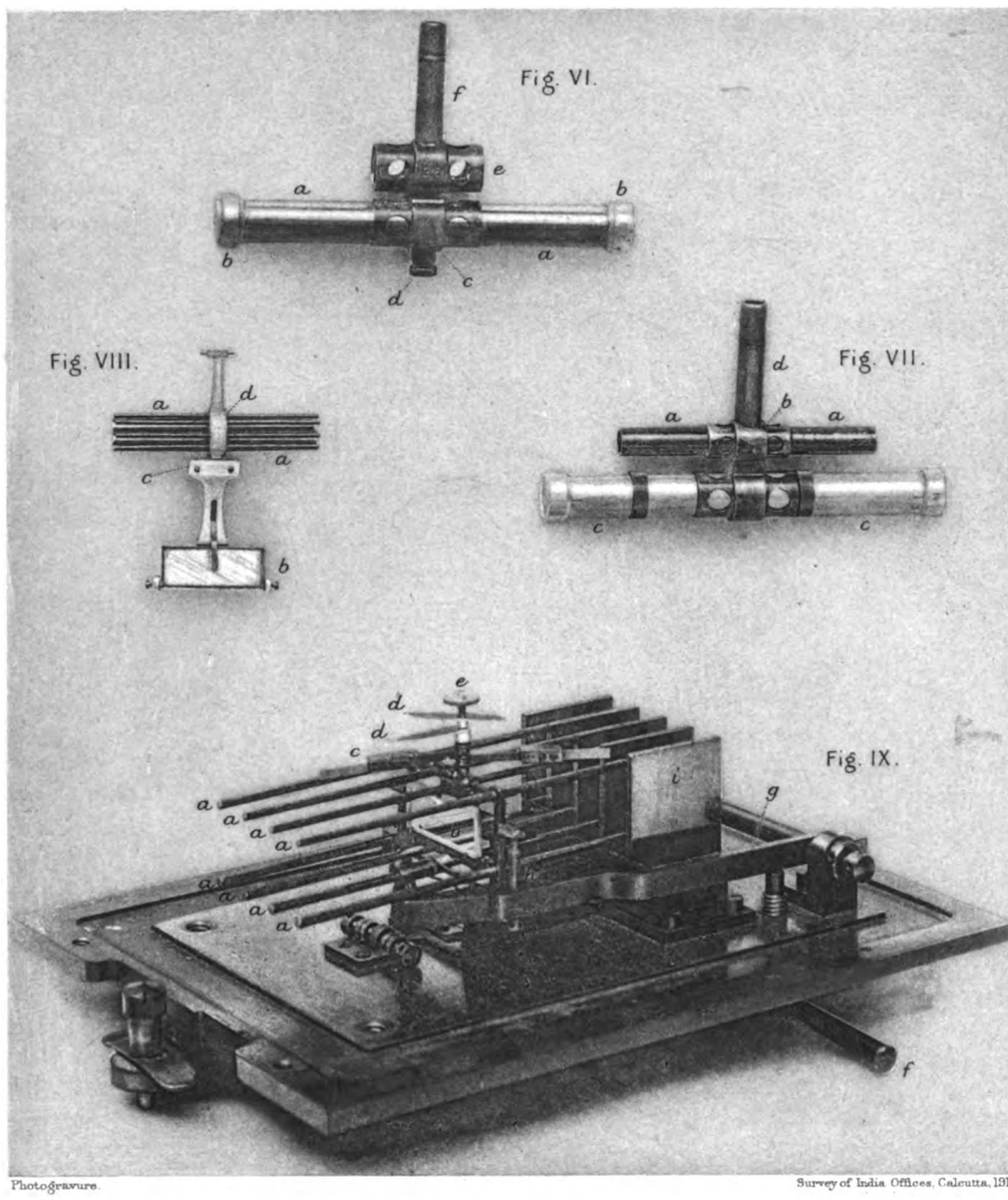

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Figs. VI and VII. MAGNETOMETER MAGNETS.

Fig. VIII. MAGNET SYSTEM OF DECLINATION AND H.F. MAGNETOGRAPHS.

„ IX. „ „ „ VERTICAL FORCE MAGNETOGRAPH.

Fig. VI.

- *a* Collimator magnet
- *b* Aluminium cell
- *c* Magnet sheath
- *d* Clamping screw
- *e* Sheath for inertia bar
- *f* Shank

Fig VII.

- *a* Short magnet
- *b* Magnet sheath
- *c* Aluminium collimator
- *d* Shank

Fig. VIII.

- *a* Nine small magnets
- *b* Mirror
- *c* Cross bar
- *d* Aluminium centre-piece

Fig. IX.

- *a* Magnets in rows
- *b* Mirror attached to magnet
- *c* Bimetallic temperature bar
- *d* Light vanes
- *e* Gravity bob
- *f* Lever
- *g* Lifter arm
- *h* Upright lifter pin
- *i* Copper damping plates

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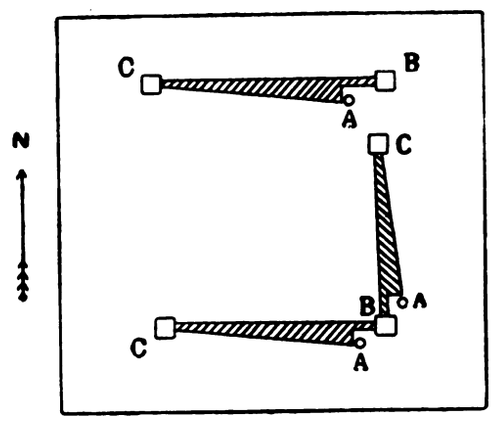
Each of the instruments in the observatories is supported on masonry pilllars and consists of a lamp and recording apparatus connected by a flat metal tube to the magnet system. The diagram below shows the positions the magnetographs occupy in each observatory.



The metal tube for each instrument is here represented - in plan - by the lines AC and BC. The ends A and B rest on one pillar and C on another. At A is a lamp, at B the recording apparatus and at C the magnet system. The distance of the magnets from each other is about 9 feet, and as they are small there is no appreciable interaction between them. Each instrument is covered with a framed glass case in which calcium chloride is provided in cups to absorb moisture and to keep the instruments dry.

The magnet systems (Fig. VIII) of the declination and horizontal force instruments are very similar; each consists of a set of small magnets (a) cemented round an aluminium centre piece (d). The magnet system in the former instrument is suspended by a very fine phosphor bronze ribbon and that of the latter by a quartz fibre. Each suspension is attached to the torsion rack at the head of the vertical brass tube fixed to a copper box in which the magnet swings, the copper acts as a damper and also helps to secure uniformity in the temperature of the magnet. A thermometer is fixed in an aperture in the box with the bulb inside. An adjustable plane mirror (b) is attached below the magnet to a cross bar (c) fixed to the aluminium centre piece (d) and immediately below this moveable mirror is the fixed mirror. In the front of these mirrors, attached to the copper box, is a plano-convex lens of 165 cms. focal length.

The magnet in the declination instrument hangs in the magnetic meridian, whereas in the horizontal force instrument the magnet is held in position at right angles to the magnetic meridian by means of the torsion of the supporting fibre.

The magnet system (Fig. IX) of the vertical force instrument consists of eight small magnets (a) in two parallel rows of four each, fixed to an aluminium frame. To the centre of the frame are attached a moveable mirror (b) and behind the mirror an agate knife edge: these are at right angles to the magnetic axis of the magnets. The knife edge rests on an agate plane, and the magnet system is adjusted so as to oscillate about the horizontal knife edge. Two counterpoises on the magnets are provided for approximately adjusting the balance of the magnet system. A bimetallic temperature bar (c) is screwed centrally on to a vertical stem on the aluminium frame and adjusted transversely to compensate for the effect of temperature on the magnet system, and two light vanes (d) and a gravity bob (e) are also screwed to the same vertical stem for the fine adjustment of the balance and sensitiveness of the magnet. The magnet can be raised by means of a lever (f) acting on an arm (g) with an upright pin (h) which fits into a hole in a projecting part of the aluminium frame and ensures that the magnet system shall always be lowered on to the same part of the agate plane.

The recording apparatus of each of the three instruments consists of a cylinder or drum and a pendulum clock. The drum, which is connected to the clock-work, makes a complete revolution in 24 hours. The axis of the drum is at right angles to the axis of the magnet. The light from the lamp passes through a slit, and the image of the slit, formed by the plano-convex lens in front of the magnet, falls on the fixed mirror and the mirror attached to the magnet and is reflected by both mirrors back through another part of the same lens and a cylindrical lens near the recording apparatus and converges to two points on a sheet of rapid bromide paper which is wound on the drum. A wooden box covers the drum and protects the photographic paper from all light except that reflected from the mirrors. As the magnet with its attached mirror moves with the variation of the magnetic force the spot of light traces a sinuous line on the sensitized paper. The second spot of light reflected from the fixed mirror also traces its record on the photographic paper as a straight line which provides a base line from which to measure the fluctuations in the ordinate of the curve produced by the moveable mirror. The light from the fixed mirror is cut off for two minutes at every hour by a shutter operated by the clock-work which turns the drum, so that the straight line trace on the record is divided into hours and a time scale is thus provided.

The slit and the lamp can be moved laterally about an inch: by this means the source

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of light is moved from one fixed position to another and the record for another 24 hours, or for two days in all, is traced on one sheet of photographic paper.

A plane mirror in front of the cylindrical lens, when inclined to an angle of 45 degress, throws the reflected light from the fixed and moveable mirrors of the magnet system on to a graduated ground-glass scale thereby permitting of convenient eye observations.

A more detailed description of the self-recording instruments by Professor W. Watson will be found in "Terrestrial Magnetism and Atmospheric Electricity" Vol. VI, No. 4, December 1901.

Routine at observatories.

The observatory chronometers at Dehra Dūn and Kodaikānal are compared regularly twice a week against the sidereal clocks at the astronomical observatories at these places. The chronometers at the other two magnetic observatories, Barrackpore and Toungoo, are checked by time observation taken once a week to East and West stars with a transit theodolite. During the short time requisite for moving the light on the photographic papers after the first 24 hours and also when changing the papers at the end of the next 24 hours the shutters of the magnetographs are closed at the local mean time corresponding, as nearly as convenient, to 10 hours Madras local mean time, i. e., about the same instant of time at each observatory; the vertical force magnet is arrested to avoid any jar to it; the thermometers attached to the magnetographs are read; the driving clocks of the magnetographs are wound and compared against the observatory chronometer and set to correct time if necessary. When the above operations, which complete the record for every period of 24 hours, have been performed the arrester of the vertical force instrument is released, the shutters of the declination and horizontal force instruments are opened and the time is noted in each case.

The quick-lime in trays in the observatory, used for absorbing the moisture in the room, is renewed if necessary.

Temperatures, besides being read at 10 hours, are also recorded twice daily at 13 and 16 hours. The Duplex lamp under the out-take pipe in the observatory is adjusted to burn at the necessary height, for reducing or increasing the temperature in the room so as to keep it uniform throughout.

The photographic papers of each instrument, which are changed after every 48 hours, are developed soon after they are removed and when dry are written up.

Visual deflections with the collimator magnet of the observatory magnetometer are taken every second day for determining the scale values of horizontal and vertical force magnetographs, the omitted days being those on which the papers are changed.

Photographic deflections are taken once a month.

Absolute observations of the declination, horizontal force and dip were originally taken twice a week but since 1911 declination and horizontal force have been taken three times a week and dip observations daily, except on Sundays.

The weekly returns of each observatory are submitted regularly by the magnetic observer to Head Quarters and consist of (1) the original absolute magnetic observations taken during the previous week, (2) an abstract of results, (3) a statement of interruptions of magnetograph records.

In the beginning of each month the whole of the magnetograph records for the previous month are submitted to Head Quarters, where the results are finally computed and tabulated.

Description of observatories.

Dehra Dūn Observatory.

In Latitude 30° 19′ 19″ N., Longitude 78° 3′ 19″ E. This observatory which is situated in the compound of the Trigonometrical Survey Office is the chief base station of the Magnetic Survey. It is 2230 feet above mean sea level.

The building consists of a domed room of masonry 15 feet square, entirely underground, the floor of the room being 20 feet below ground level. All round this room is a passage 2 feet wide, the outer walls of which are 4 feet thick. The top of the dome is just above ground level and is covered with 5 feet of earth surmounted by a thatched roof to keep off the rain and sun. A stair-way from ground level leads down to the underground room. The ventilation of the room is arranged as follows:— Above the door of the passage, at the bottom of the stair-way, there is a circular opening in the wall; fresh air which passes down the stair-way from outside, enters the passage through this opening, takes up the temperature of the passage and enters the magnetograph room through a brass pipe about a foot above the floor. Any excess moisture in the air is absorbed by quicklime which

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is placed in large earthen trays in the room, the quicklime being renewed from time to time as necessary. The room is provided with an out-take pipe which passes vertically through the roof. Under the mouth of the pipe which is about a foot above the floor a Duplex lamp is burnt continuously with the object of maintaining a light and continuous draught of fresh air and keeping up a uniform temperature in the room.

There are two absolute Houses—North House and South House,—the latter being about 65 yards north-east of the magnetograph room. Each house is 11½ feet square inside and is protected by a wooden roof covered with "Ruberoid". The pillars of the two houses lie very nearly in the magnetic meridian and are separated by an interval of 35 feet, which was found by trial to be sufficient to prevent any appreciable interference when taking simultaneous absolute observations. A telegraph line connects each house with a room containing a chronograph and a break-circuit sidereal clock. When working the chronograph no visible deflection of a suspended magnet was produced when the normal current, or the induced current due to a break in a contact, was passing through the connecting wires.

A referring mark consisting of a circular brass disc let into a substantial masonry pillar was constructed about 200 yards south of the Absolute Houses, the precise azimuth from both the north and south pillars being 1°-25'-23" from south.

Serious trouble has been experienced at this observatory during seasons of heavy rainfall. Before the observatory was built experiments were made to determine the level of the subsoil water during heavy rain. A pit was dug to a depth somewhat greater than that of the floor of the proposed underground room and it was intended to observe the depth of the water that accumulated in the pit and if possible to establish a connection between this depth and the rainfall of the preceding days. However no water was observed to accumu late in the pit, all that fell or flowed into it disappeared at once in the porous gravel soil and it was therefore confidently expected that the observatory would be free from all troubles connected with underground water.

These expectations were doomed to disappointment. In 1901 soon after the observatory was built, the magnetograph room was flooded. It was found that water was penetrating the walls at two places, and the belief was that this was surface water, which but for the presence of the observatory would have flowed away or have percolated downwards. That is to say it was believed that the water which entered the observatory came from above. The following measures were adopted by the Public Works Department to prevent further inundations:—A trench, 5 feet wide, was dug all round the building to the level of the foundations; the bottom of this trench was formed into a concrete drain sloped from the north-east corner of the building and discharged at the south west and into a large earthenware pipe. This pipe was carried off about a 150 feet in a southerly direction into the large open pit previously mentioned.

The trench was filled loosely with non-magnetic boulders up to the ground level, then at the top another shallow drain was made similar to that above described, except that the discharge from this surface drain was carried off in a south direction for about 100 yards along the natural fall of the ground.

The banked up earth over the underground room was stone faced with rubble masonry to a point well underneath the drip from the eaves of the thatched roof.

The idea underlying these measures was to get rid of water falling on or near the observatory; whilst any water which might approach the building by percolation from the neighbourhood was to be received by the boulder trench and conducted into the open pit, which was suppposed to be large enough and deep enough to get rid of it by absorption and evaporation.

To carry off any water which might succeed in penetrating to the passage an earthenware drain pipe led from its lowest corner to a masonry well built a short distance away on the south side of the building. Any water which reached the well could easily be drawn off by ordinary means, and a thatched roof was erected over the well so that no rain should fall into it.

The above works seemed to be successful up to 1903, there was no leakage either into the all round passage or into the masonry well connected therewith.

In 1904 and 1906, however, water entered the room. In 1905 and 1907 the fall was less than the normal and the room remained dry, as it did in 1908 when there was no prolonged period of heavy rain-fall although the total amount was in excess.

In August 1909 serious leakage occurred. The well filled rapidly and it was observed that the water level in the catchment pit was 11 feet above the level of the floor of the observatory. This accumulation of water in the pit was believed to be due to the flow from the boulder-trench; the bottom and sides of the pit having, it was thought, become partially

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impermeable through the growth of herbage etc. A pump was therefore erected over the pit and it was hoped by its means to reduce the level of the water both in it and in the boulder trench. A second pump was installed at the well, replacing the ordinary bucket, and work on both pumps was kept up day and night for a week, but in spite of these efforts the water rose to the driving clock pillar and it was deemed advisable to remove the instruments. The Horizontal Force and Declination magnetographs had been working since 1903 with only minor interruptions, and that for the vertical force was erected in 1905. The break of record was a great misfortune.

In 1910 the underground room was kept fairly dry in spite of the heavy rains. The surrounding passage was flooded to a depth of 3 feet but the water was kept out of the magnetograph room by raising a barrier at the door. At about this time it was belived that the well was subject to percolation and that water would flow from it to the passage rather than from the passage to it, the opening from the passage was therefore closed.

In 1911 the rainfall was much below the average and there was consequently no difficulty in keeping the under ground room dry. In the following year, 1912, the walls and floor of the observatory were plastered with Portland cement to prevent the percolation of water and this appeared to be satisfactory but during the heavy rains of 1916 percolation began again and the passage round the magnetograph room was flooded. The water rose to 3 feet and flowed over the 1½ feet barrier at the door of the magnetograph room. To avoid any risk to the instruments the barrier was raised to a height of 4 feet. Bailing from the observatory and pumping from the pit were resorted to and carried on continuously night and day, but in spite of all efforts the water continued to remain at the same level for three days after which it gradually decreased, the subsidence being due more likely to a cessation of rain than to the effect of bailing and pumping.

The truth of the hitherto accepted idea as to the source of the water which found its way to the observatory now began to be doubted and an excavation was made whence the behaviour of the water in the boulder-trench could be examined. It now became clear that the pit did not depend on the trench for its supply of water but that both filled simultaneously without there being any flow in the pipe that connects them. It is clear in fact that the observations of the water in the pit which were made before the observatory was built had been misleading. It is possible that there was no very heavy and long continued fall of rain during the year when the observations were being made. It is now clear that at times, especially after there has been heavy and continuous rain in the outer hills,—this seems to be more important than rain in Dehra Dūn itself—the water level rises very nearly to the surface and remains at that level for periods which occasionally amount to a week. At such times the protection of the observatory depends wholly on the watertightness of its walls; the building resembles a boat and if there is a leak which cannot be stopped bailing is the only cure.

It is clear that the plan of pumping from the pit was quite useless, but that of letting any water which had found its way into the observatory flow into the well, whence it could be conveniently drawn or pumped was perfectly sound, so long as the well was not itself subject to percolation.

After the crisis of 1916 had passed the well was examined and it was found that it was itself quite sound, but that the earthenware pipe connecting it with the passage round the observatory was broken and that it had become a source of danger instead of a safeguard. The rate of accumulation of water in the passage had been roughly measured when the height of water in the pit was at its maximum and was found to be about 20 cubic feet per hour. It was decided, therefore to supply more convenient and accurate means of drawing off water from the passage than had been afforded by the former pipe and well. An ordinary metal water pipe was connected to the south-east corner of the passage, at floor level and was led thence to a pump at ground level outside. The pump can discharge 100 cubic feet per hour so that there is a considerable factor of safety, nevertheless there is always the danger that the leakage through the walls may suddenly and largely increase and in that case flooding would be inevitable.

The true solution is to build a new observatory above ground, and but for the difficulties financial and other that have arisen this would ere now have been undertaken.

Kodaikānal Observatory.

In Latitude 10° 13′ 50″ N., Longitude 77° 27′ 46″ E. The observatory is built into the western slope of the steep hillside about midway between the Solar Physics observatory and the Assistant Director's house. It consists of a room 15 feet by 20 feet and is protected by an all round passage, the design being similar in most respects to the building at Dehra Dūn. The observatory is

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built only partially underground from motives of economy and the exposed wall on the west side was banked up with earth having a minimum depth of 6 feet from the masonry. The outer passage drains naturally on to the road-way outside, and there is consequently no fear of any flood water finding its way into the inner room.

Above the observatory room and supported on its arched roof by means of teakwood pillars is the Absolute House, built entirely of wood except the floor and two instrument pillars which are of pressed tiles.

A masonry pillar situated about 300 yards North of the building carries a referring mark.

The height of the observatory is about 7550 feet above mean sea level and though admirably placed as regards its geographical position and for purposes of control, the site is not an ideal one for a base station of a magnetic survey owing to the fact that the rock on which it is built is distinctly magnetic. The same rock occurs all round the observatory and there is no absolutely non-magnetic stone in the neighbourhood. Consequently the self-recording instruments in the observatory room, some portion of which had to be blasted out of solid rock, are surrounded by a material which is to some extent magnetic, and it was chiefly in order to place the absolute instruments as far as possible from this source of disturbance that the absolute house was built above the underground room.

Note:—In 1916 the Kodaikānal Observatory was, with the sanction of the Government of India, placed under the control of the Director of the Solar Physics Observatory, for better supervision of the work than is possible at so great a distance from the Survey Head Quarters at Dehra Dūn. The results of the observations are, however, sent to the officer in charge of No. 18 Party (Magnetic), Survey of India, for final computation and for record.

Toungoo Observatory.

In Latitude 18° 55′ 45″ N., Longitude 96° 27′ 3″ E. This is the only magnetic observatory in Burma. It is situated on the south side of the parade ground at Toungoo, about 100 yards south-west of the Military Police Barracks. It is 160 feet above mean sea level.

The building is above ground level and is entirely of wood. It consists of a room 15 feet by 20 feet, the walls and roof being packed with sawdust contained between teak-wood partitions. All round this room is a passage 2 feet wide, the outer walls of which are double, 18 inches thick in all and packed with sawdust as above. A second roof rests on the outer walls of the passage, above the roof of the magnetograph room and an air passage is thus provided between the roofs of the inner and outer rooms.

A closed verandah, 6¾ feet wide, of wood-frame fitted with bamboo matting runs round the building to screen it from the direct rays of the sun. Above the roof of the passage a sloping roof of timber-frame with Willesden rot-proof canvas on boards, covers the whole building.

The floor of the building is of teak-wood planking on two feet of rammed sand resting on 6 inches of concrete.

The arrangement for the ventilation of the observatory is as follows:— On top of each of the four corners of the roof of the passage are vertical pipes with wooden caps; when one or more of the caps are removed, as may be necessary, the fresh air from outside passes down these pipes into the passage where it takes up the temperature of the passage and is conducted into the inner room through two pipes on the roof of the room. The room is also provided with an out-take ventilation pipe which passes vertically through the roofs of the room and passage. Under this pipe a Duplex lamp is burnt continuously with the object of maintaining a light and continuous draught of fresh air and keeping up a uniform temperature in the room. The chimneys of the small lamps of the instruments are connected by narrow tubes to the main out-take pipe so that the products of combustion are carried away and not allowed to vitiate the air of the room.

About 40 yards south-west of the magnetograph building is the Absolute House. It is built of double walls of teak-wood packed with sawdust and is supported on blocks of concrete about two feet above ground level. In circular openings cut in the wooden flooring are two observing pillars of solid teak blocks embedded in concrete foundations.

A referring mark consisting of a circular disc let into a substantial masonry pillar was constructed about 200 yards North of the Absolute House, the precise azimuth from both the pillars being 181° 7′ 42″ from South.

Barrackpore Observatory.

In latitude 22° 46′ 29″ N., Longitude 88° 21′ 39″ E. This observatory was built in July 1903 and is of similar construction to that at Toungoo. The Committee appointed by the Government of India in March 1914 to consider the position of the Magnetic Survey and advise as to the steps to be

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taken to complete it were of opinion that the four observatories, Dehra Dūn, Kodaikānal, Toungoo and Alibāg, were sufficient for recording the diurnal and disturbance changes of terrestrial magnetism in India, and recommended that the Barrackpore Observatory should be closed as soon as a complete set of permanently marked field stations, scattered over the country, had been established and observations at all of them had been made. When observations at the 73 permanently marked Repeat Stations were completed the observatory was accordingly closed on the 26th April 1915.

The self-recording instruments showing the declination and the horizontal intensity were installed in August 1903 and one for recording the vertical intensity in April 1907: these instruments were in operation up to the 26th April 1915 when the observatory was closed.

ABSOLUTE INSTRUMENTS.

The absolute instruments used at the observatories are as follows:—

At Dehra Dūn magnetometer No. 5 of the Survey of India design, made by T. Cooke and Sons, was adopted as a provisional standard up to the end of 1902 until an old magnetometer of the Kew pattern—No. 17 by Elliott Brothers—which was under repair by T. Cooke and Sons, was received in January 1903 and was taken into regular use as the standard.

Dip Circle No. 44 by Barrow, repaired by Dover, was used up to November 1906 as the Survey standard when it was replaced by an Earth Inductor (No. 30) of the Wild pattern by Schulze, and a mirror galvanometer by Plath of Potsdam.

The magnetometers at the other three observatories are all of the Kew pattern, as at Dehra Dūn. The Dip Circles by Barrow and the Earth Inductors and galvanometers are also similar to those at the Dehra Dūn observatory.

The Earth Inductor at the Barrackpore observatory was introduced in place of the Dip Circle in January 1907 and those at Kodaikānal and Toungoo in February 1907.

All the instruments at each of the four observatories were tested at Kew before being sent out to India.

Barrackpore and Toungoo observatories were each provided with a 6-inch theodolite by Troughton and Simms for determining time by astronomical observations.

The Kew designs of magnetometer and dip circle are so well known to magneticians that it is unnecessary to give a description of them. A detailed and illustrated description of these instruments will be found in Stewart and Gee's Practical Physics, Part II, Chapter VI.

The Earth Inductors used at the observatories are of the type designed by Wild and constructed by Schulze of Potsdam. Before the Earth Inductors were installed in the four observatories they were compared with one another, the comparisons being carried out by simultaneous observations with interchange of sites between each set. The close agreement in the results which differed by only $0'\cdot1$ to $0'\cdot2$ shows that the instruments are capable of far greater accuracy than the dip circles and are well adapted for observatory work.

Description of Absolute Instruments.

The unifilar magnetometer.—(Figs. I and II) of the Survey of India pattern, used in the field for the determination of declination and horizontal intensity, is a modification of the well known Kew pattern. It was designed by Capt. H. A. Denholm Fraser, R.E., of the Survey of India and made by Messrs. T. Cooke and Sons. The instrument consists of a horizontal divided circle, with verniers reading to 20 seconds and a level, supported on three levelling screws. Above this is a rectangular frame of aluminium alloy supporting a mahogany box (a) in which the magnet is suspended. The box serves the purpose of protecting the magnet from sudden changes of temperature and guarding it from the disturbing effects of air currents. A brass suspension tube (b) is screwed vertically into the centre of the top of the magnet box. The top of the tube is provided with a torsion head-piece (c) which fits into the tube and can be moved round, and clamped in any desired position by a clamping screw (d). The torsion head is divided to two degrees and figured at every 20th degree, the divisions being read by eye against an index mark on the tube. In the centre of the torsion head-piece is a rack and pinion arrangement (e) operated by a milled-headed screw (f) for raising or lowering the magnet. The magnet is suspended in the box by a fine* phosphor-

* The adoption of phosphor-bronze ribbon as a means of suspension was due to the suggestion of Professor W. Watson, F.R.S., and has proved very satisfactory. With care it rarely breaks, whilst the correction on account of torsion is generally nil and never exceeds a few seconds of arc.

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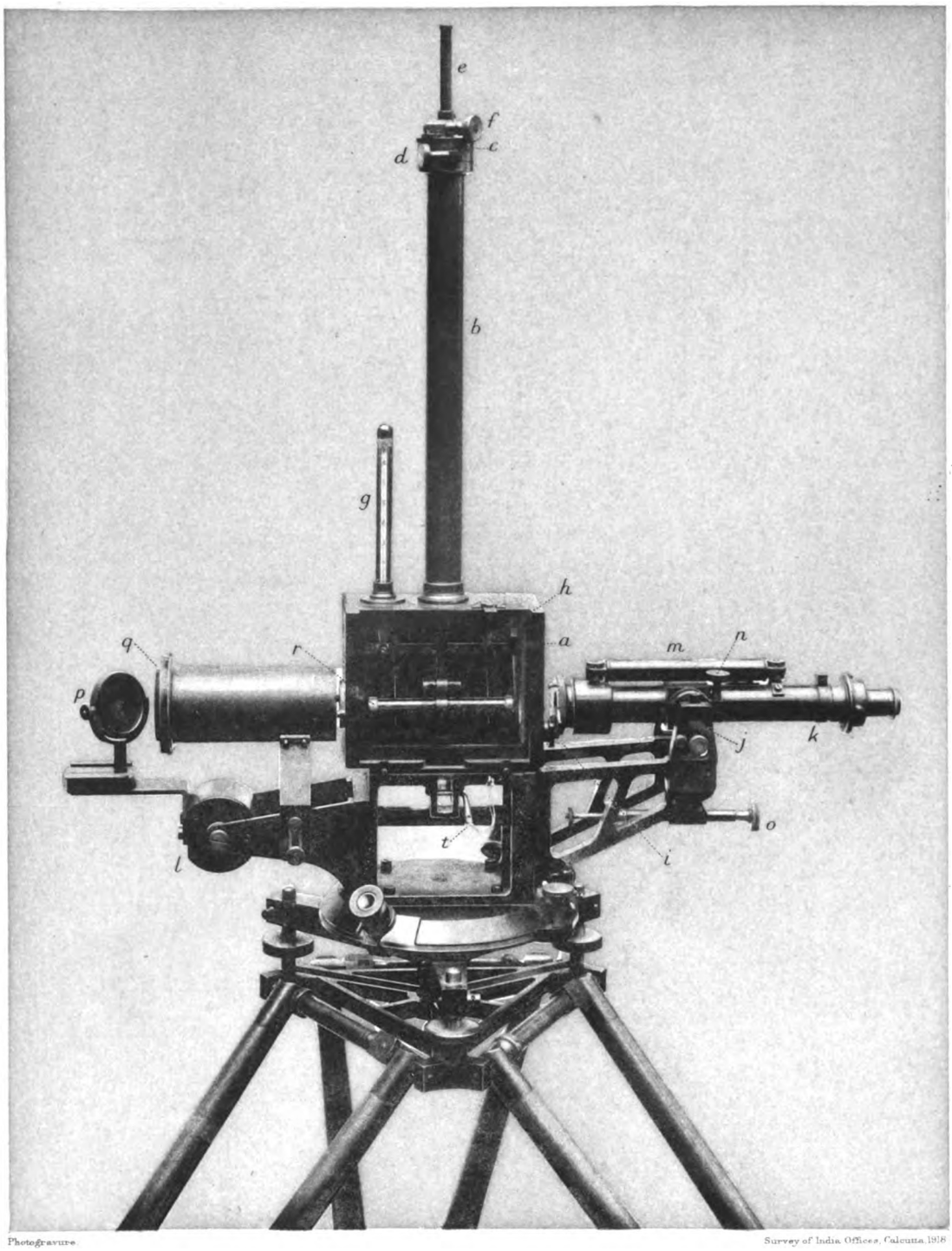
Fig. 1.



Photogravure. Survey of India Offices, Calcutta, 1918.

MAGNETOMETER

SURVEY OF INDIA PATTERN.

a	*Magnet box*	*g*	*Thermometer*
b	*Suspension tube*	*h*	*Arrester*
c	*Torsion head-piece*	*i*	*Lens on swivel*
d	*Clamping screw*	*j*	*Y supports*
e	*Torsion rack*	*k*	*Telescope*
f	*„ „ screw*	*l*	*Counterpoise*

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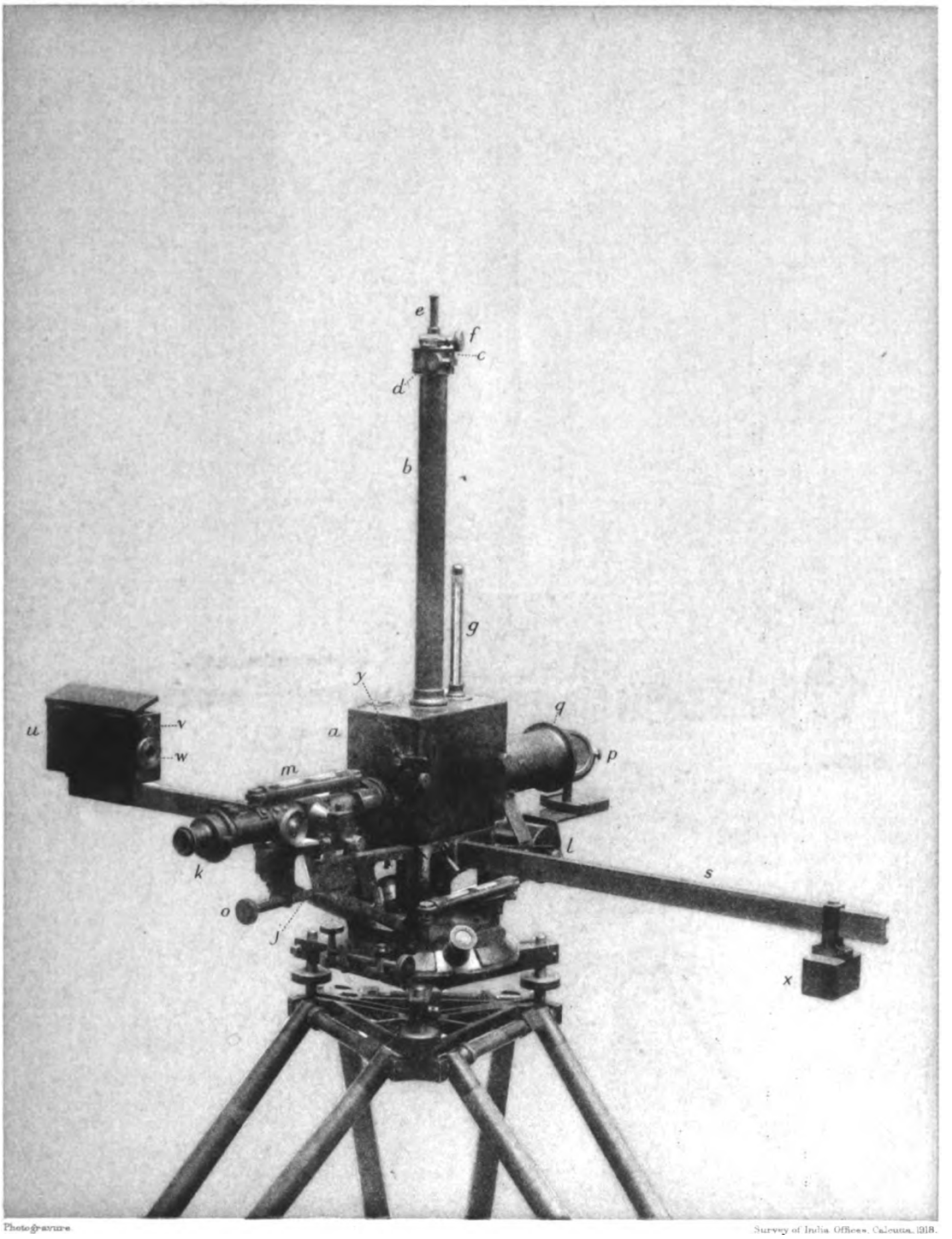
Fig. II.



Photogravure. Survey of India Offices, Calcutta, 1918.

MAGNETOMETER

SURVEY OF INDIA PATTERN.

m	*Telescope level*	*s*	*Deflection bar*
n	*„ clamp*	*t*	*„ „ securing pin*
o	*„ slow motion screw*	*u*	*Sliding magnet box*
p	*Mirror*	*v*	*Brass slides*
q	*Iris diaphragm*	*w*	*Thermometer socket*
r	*Collimator magnet*	*x*	*Counterpoise*
		y	*Arrester handle*

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bronze ribbon (about ·008 mm. in thickness) which is attached to the torsion rack by means of a two-jawed chuck, the centre of the chuck being adjusted by the maker to be vertically over the centre of motion of the instrument when the latter is level. The lower end of the suspension ribbon is fastened in a similar chuck, the lower end of which clips on to a shank on the sheath of the magnet. On the top of the magnet box is a vertical brass socket for holding a thermometer (g), with the bulb inside the box. The box is fitted with an adjustable arrester (h) for steadying the suspended magnet and can be opened conveniently on one side and closed by a shutter of wood; a glass shutter is substituted when the plummet is used so that there may be sufficient light to read the graduated rim.

The plummet, used for eliminating the torsion of the suspension ribbon, is a xylonite disc mounted on a metal spindle and its weight is equal to the weight of the short magnet in its sheath. Two weights, one large and one small, are provided to slip over the spindle. With the large one in position the plummet is equal in weight to the long magnet in its sheath with the inertia bar, and with the small one the weight is equal to that of the same magnet without the bar. A small lens (i) on a swivel attached to the object end of the telescope can be turned over in front of the object glass and enables the divisions on the plummet to be read without altering the focus of the telescope. A metal bracket projecting from the aluminium frame of the instrument is provided with Y supports (j) for a telescope (k) which is balanced by a counterpoise (l) on the opposite side of the instrument. The transit axis of the telescope is adjusted by a striding level. The focal length of the telescope is eight inches and it is provided with two eye pieces, one of high and one of low power. On the glass diaphragm of the telescope two scales are engraved, one vertical and the other horizontal, for reading the lines of collimation of the magnet. A level (m) is mounted on the top of the telescope for setting its collimation axis horizontal. A clamp (n) and slow motion screw (o) are provided for the slow movement of the telescope in a vertical plane. There are two windows of optical glass at either end of the magnet box in line with the telescope. Light from a mirror (p) on a bracket on the opposite side of the telescope is regulated by an iris diaphragm (q) and is reflected through the windows to illuminate the cross lines on the suspended magnet and the scale on the glass diaphragm.

A long deflection bar of gunmetal (s) fits through two slots in the aluminium frame and is secured by tapered pins (t). It is at right angles to the axis of the telescope and is horizontal when the instrument is level, its centre being vertically over the centre of motion of the horizontal arc. In the upper surface of the bar, on either side of the magnet box, a series of five holes are bored the centres of which are respectively 22·5, 26·25, 30, 35 and 40 centimeters from the centre of the bar. During the deflection observation the long magnet is placed inside a wooden box (u) which rides on the deflection bar; this box opens at the top and contains a metal frame work with Y supports on which the long or deflecting magnet (Fig. VI) rests. There are two small circular openings on opposite sides of the box and in line with the Y supports; these openings are closed by small brass discs on swivels during the deflection experiment. Before commencing the deflection observation the discs are turned off and a sighting tube, consisting of a vulcanite cylinder of the same diameter as the deflecting magnet, is placed on the Y supports and through an axial aperture in the tube the suspended magnet may be observed, when the latter should have its height adjusted by lowering or raising the suspension rack until the axis of the sighting tube and of the suspended magnet are in the same plane. This adjustment makes sure of the axis of the suspended magnet and of the deflecting magnet being in the same horizontal plane, when the latter is placed on the Y's in the deflection experiment. The box is so constructed that the centre of the magnet when in its Y's is exactly over the centre of a small metal plug under the box which fits the holes in the deflection bar accurately. At one end of the box is a horizontal brass socket (w) for holding a thermometer the bulb of which enters the box. A counterpoise (x) equal in weight to the magnet box with the thermometer and deflecting magnet in place and which rides on the bar, is used to balance the instrument during the deflection experiment.

The long magnet (Fig. VI, a), or the vibration magnet as it is sometimes called, is a true hollow cylinder, 0·4-inch external diameter, 0·3-inch internal diameter and 3·65 inches long, with an aluminium cell (b) mounted externally at each end. The cell at the north end carries an achromatic lens and that at the south end a piece of optically plane glass on which two cross lines are engraved at right angles to each other: these lines are situated exactly at the principal focus of the lens at the north end. The magnet with its lenses is known as the collimator magnet. It is supported in a sheath (c) made of brass in which it can be rotated, and it can be clamped in any desired position by means of a small screw (d) which engages in a shallow groove exactly half way between the ends of the magnet. Four marks on the magnet at 90 degrees intervals and a mark on the sheath are provided to facilitate the setting

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of the magnet when determining the relative positions of its collimation and magnetic axes. Above the magnet sheath and joined to it is another sheath (e) in which an inertia bar is inserted when observations are made to determine the moment of inertia of the magnet system. The upper sheath has a shank (f) which can be attached to the chuck of the suspension ribbon. The shank is about an inch long and hence the point of suspension is high, so that the balance of the magnet alters little with changes in the vertical component of the magnetic force.

The short magnet (Fig. VII) which is suspended during the deflection observation is similar to the long magnet, reduced in all its dimensions in the ratio 1·46 to 1. It is mounted in sheath (b) above and parallel to an aluminium collimator (c) similar to the collimator magnet. The short magnet is used in the deflection experiment only.

The Dip Circle.—All the field dip circles were made by Dover and are of the ordinary Kew pattern except that they are provided with folding sights on the top of the magnet box and a simple arrangement called the reverser for reversing the face of the needle without touching it by hand or opening the box.

The dip circle (Figs. III and IV) consists of a 6-inch horizontal circle (a) with two verniers reading to one minute of arc. The horizontal circle is provided with a level (b) and three foot-screws (c) for levelling the instrument. A horizontal rectangular plate (d) which rotates on the central vertical axis carries a narrow metal box (e) in which the needle is enclosed when in use and a 6-inch vertical circle (f) with two verniers (g) reading to one minute of arc. The plate can be rotated in azimuth and its position read by the verniers on the horizontal circle. The horizontal circle is provided with two stops (h) which can be clamped in any desired position so that by bringing the arm which carries the clamp of the horizontal circle up to one of the stops the instrument can be brought to either of the predetermined positions. The two sides of the box are glazed for viewing the ends of the needle, the side next to the vertical circle is fixed and the opposite one forms a hinged door.

The positions of the two ends of the needle are observed by means of two microscopes (i) which are attached to and move round with the cross piece carrying the verniers of the vertical circle. The microscopes are so placed that when the circle reading is zero the line joining the wires, seen in the field of the two microscopes, is horizontal.

The verniers are read by lenses (j) attached to the cross piece.

The dip needle, Fig. IV (k), is about three inches long with pointed extremities. The axle of the needle consists of a very fine polished cylinder of hard steel at right angles to the plane of the needle. When observations are taken with the needle the axle rests on two rounded horizontal agate edges (l) fixed on vertical supports in the magnet box and the needle is free to swing between the supports. The agate edges are adjusted to lie in the same horizontal plane. Both the supports have vertical slots (m) in them to admit of the points of the needle being observed when the needle is vertical. A lifter consisting of Y's which can be moved simultaneously up and down grooves in the supports by means of a milled-head (n) outside the box, is provided. When the milled-head is turned to the right the Y's rise and lift the needle off the agate edges and the needle is lowered again by a turn of the milled-head to the left. The Y's are so adjusted that when the axle of the needle is lowered on to the agate edges the prolongation of the axis passes through the centre of the graduated vertical circle.

The reverser (o) which consists of a light frame of brass is fitted to the centre of the top of the box and is so arranged that the needle when resting on the Y's of the lifter can be lifted and reversed without opening the box or touching the needle with the fingers.

The sights (p) on the top of the magnet box are fitted to facilitate the operation of setting the needle in the meridian. Owing to the frame work of the magnet box being of brass instead of wood, it is found that the adjustment of the sights once made seldom requires alteration. They are however tested about once a month when the instrument is in use.

The sights are in adjustment when the vertical plane containing the front and back sights is parallel to a vertical plane through the magnetic axis of the needle when the needle swings freely on the agate planes. To make the adjustment, first find the reading of the horizontal circle when the needle hangs vertically, in the usual way. Then direct the instrument by means of the sights on some convenient mark whose position with regard to the magnetic meridian has been determined by the magnetometer and read the circle, the mean of two or more intersections being taken. If the sights are in adjustment the difference between these two readings will equal the angle between the mark and the magnetic meridian, which is already known; if not, one of the sights is shifted laterally till the above condition is satisfied within two or three minutes of arc. The sight is then screwed down and the adjustment is complete.

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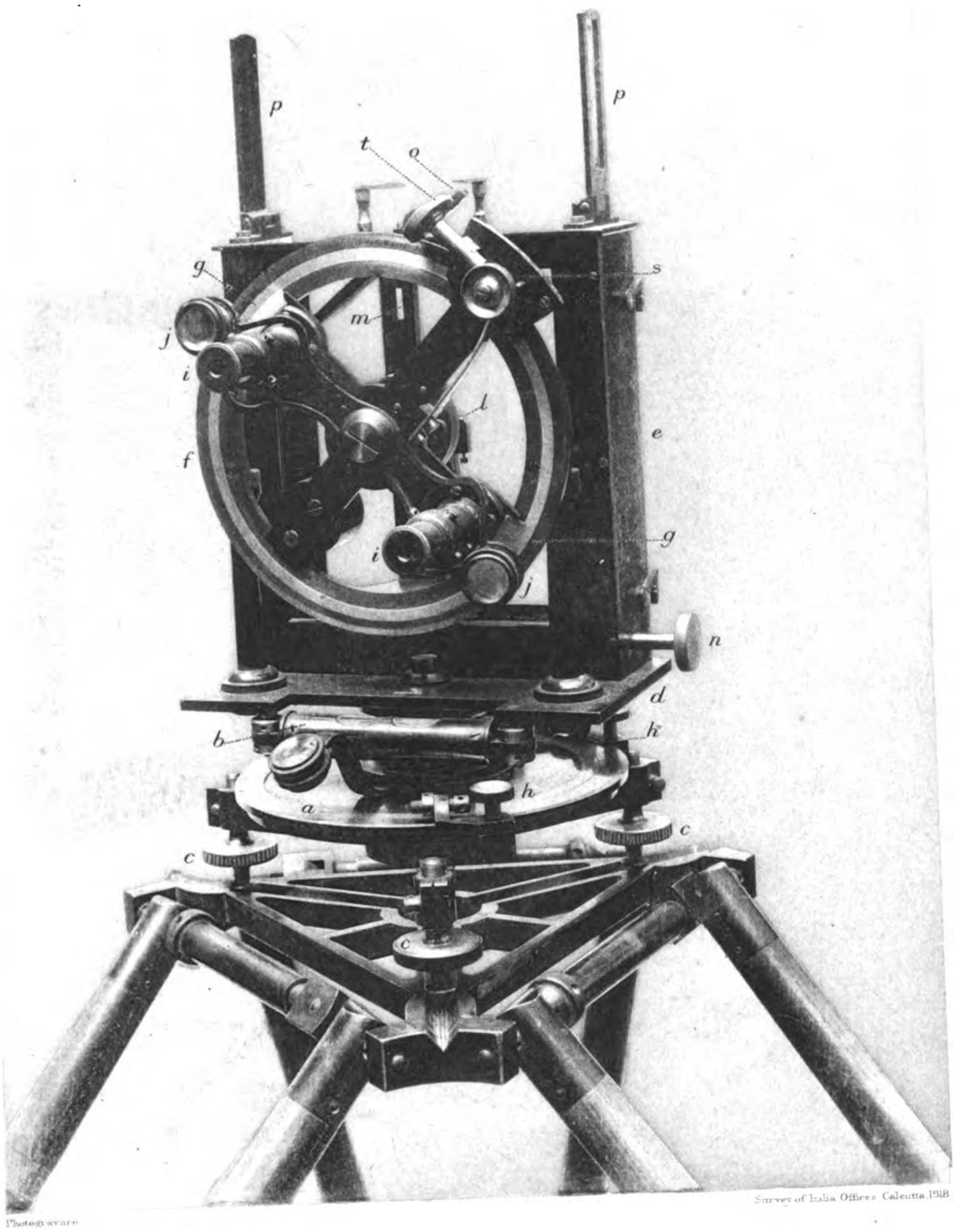
Fig. III.



DIP CIRCLE.

a	Horizontal circle	*f*	Vertical circle
b	" " level	*g*	Verniers
c	Foot-screws	*h*	Stops
d	Rectangular plate	*i*	Microscope
e	Magnet box	*j*	Vernier lens

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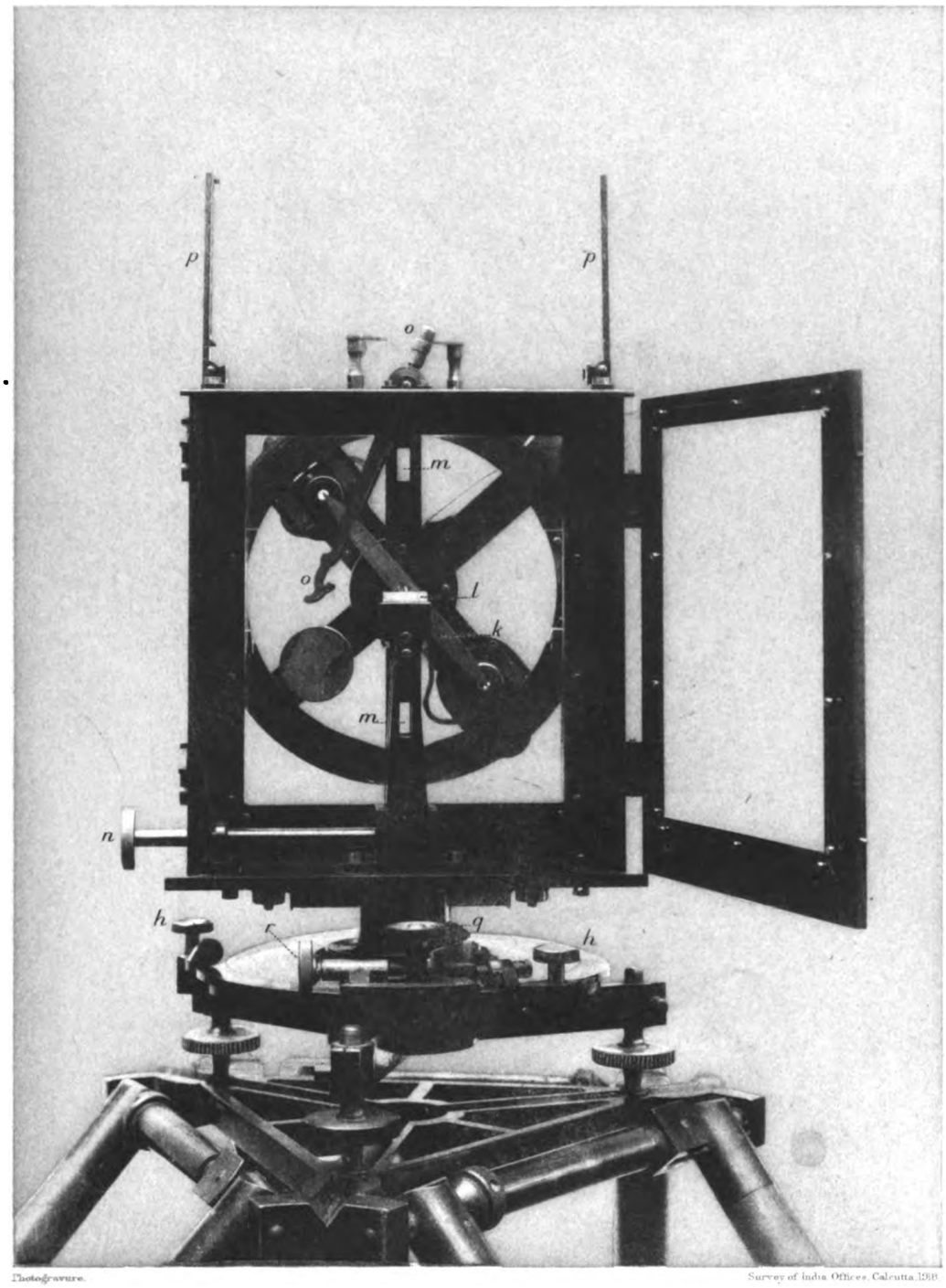
Fig. IV.



Photogravure. Survey of India Offices, Calcutta 1918.

DIP CIRCLE.

k	*Dip needle*	*p*	*Sights*
l	*Agate edge*	*q*	*Horizontal plate clamp*
m	*Slots*	*r*	*Slow motion screw*
n	*Milled-head*	*s*	*Vertical plate clamp*
o	*Reverser*	*t*	*Slow motion screw*

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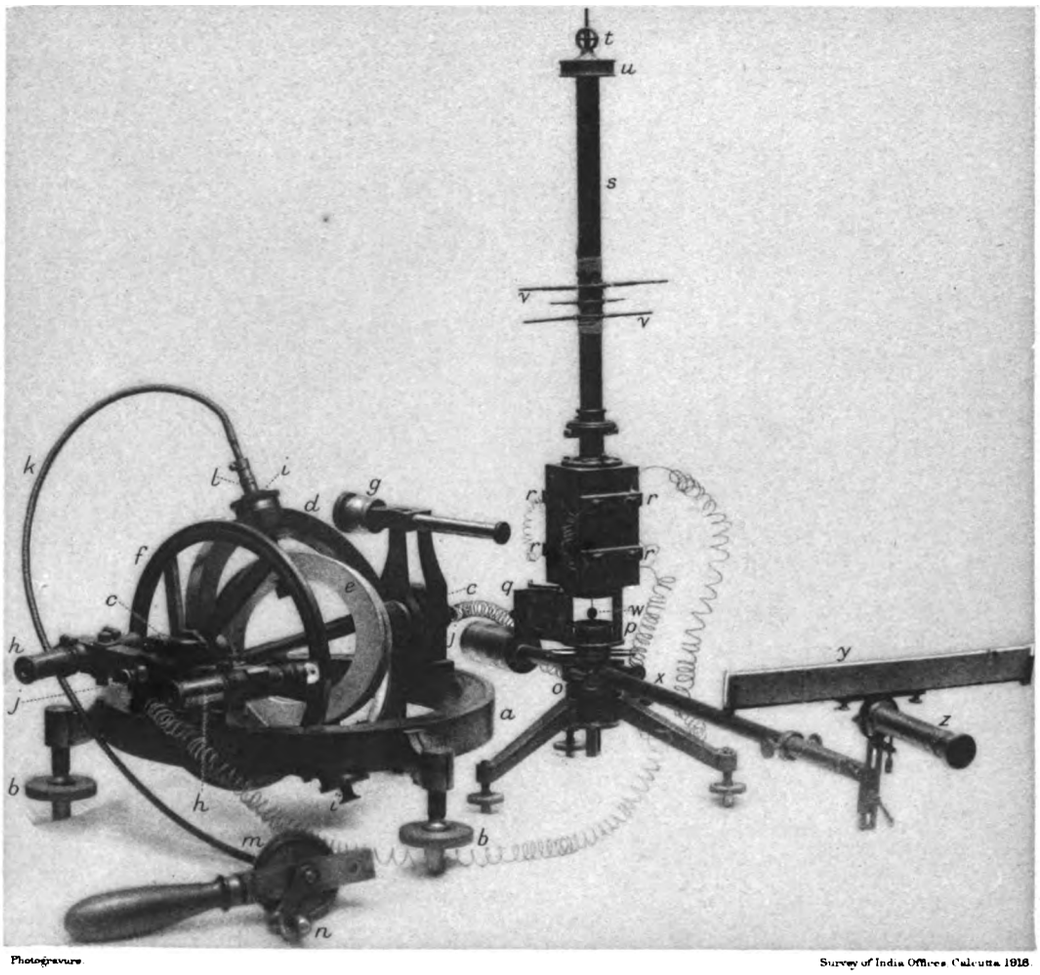
Fig. V.



Photogravure. Survey of India Offices, Calcutta, 1918.

EARTH INDUCTOR AND GALVANOMETER.

a	*Horizontal ring*	*n*	*Crank handle*
b	*Levelling foot-screws*	*o*	*Brass base*
c	*Standards*	*p*	*Circular metal box*
d	*Vertical ring, bearing coil*	*q*	*Hinged doors*
e	*Coil*	*r*	*Copper blocks with coils*
f	*Vertical circle*	*s*	*Suspension tube*
g	*Micro: slow motion screw*	*t*	*" rack*
h	*Microscopes*	*u*	*Torsion head-piece*
i	*Brass bearings*	*v*	*Controlling magnets*
j	*Binding screws*	*w*	*Mirror*
k	*Flexible shaft*	*x*	*Metal rod*
l	*Screw attachment*	*y*	*Scale*
m	*Gear*	*z*	*Telescope*

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When the sights are in adjustment and the declination has been observed before the dip—as is always done in the field—the correct azimuthal setting is found directly from the mean intersections of the referring mark, and no observations with the needles for this purpose are then required. This affords a quick and accurate method of setting the instrument in low magnetic latitudes where it is exceedingly tedious and sometimes almost impossible to intersect the needle at all when in the vertical position, owing to the vertical component of the magnetic force being too feeble to overcome the friction of the axle of the needle on the agate planes.

The Earth Inductor, Fig. V, consists of a horizontal circle of brass (a) supported on three levelling foot screws (b); the upper surface of the circle is graduated to whole degrees. Another solid concentric circle of brass fits closely against the inner side of the graduated circle and can be rotated in azimuth and clamped in any desired position by two clamping screws on its under surface. The inner circle carries a vernier reading to 5 minutes of arc and two standards (c) which support the axle of the ring (d) bearing the coil (e). The vertical circle (f) is mounted at one end of the axle and its micrometer slow motion screw (g) at the other; the circle is read by two microscopes (h) supported on arms attached to the standard. The axle of the coil is at right angles to that of the ring and is carried in cylindrical brass cells (i) containing cups of agate in which the ends of the axle rotate. A commutator is fixed on to the lower end of the axle of the coil and the brushes for the commutator are attached to two narrow metal plates which are screwed to the brass supporting-ring and insulated from it by two ebonite plates; the metal plates are connected by insulated wires running in grooves in pieces of ivory screwed to the inner side of the supporting-ring and terminating in binding screws (j) at the ends of the ring-axle. The bearing at the commutator end is provided with three capstan headed screws for adjusting the axis of the coil in a vertical plane, i. e., at right angles to the axis of the supporting-ring. The opposite or upper end has a longitudinal adjustment for regulating the correct contact in the bearings and allowing for any wear or lost motion.

A flexible shaft (k), connected by a screw attachment (l) to a spindle at the upper end of the axle of the coil, is provided with a gear (m) and crank handle (n) for rotating the coil.

The axis of the ring supporting the coil is levelled by means of a striding level and the verticality of the axis of the coil is tested by a level attached to the inside of the coil. The axis of the coil is placed in the magnetic meridian by means of a compass supported on the frame which carries the striding level.

The Earth Inductor when in use is connected to the galvanometer by wires as shown in fig. V.

The mirror galvanometer, as it is called, is by Plath of Potsdam. The base of the instrument consists of a circular piece of brass (o) supported on three legs terminating in foot-screws, it carries a circular box (p) with two hinged doors (q); in the middle of the front door is a glass disc for viewing a suspended mirror. A vertical axis under the box fits into a socket in the base and the whole of the upper part of the instrument rotates on this axis. Above the box are four coils encased in four copper blocks (r) which slide one above the other in pairs from opposite sides into a rectangular casing of copper which is attached to the top of the circular box; the suspension tube (s) is screwed on to the top of the rectangular casing. From the suspension rack (t) on the torsion head-piece (u) of the suspension tube the astatic magnetic system is suspended by a very fine phosphor-bronze ribbon and swings freely in longitudinal recesses in the middle of the upper and lower blocks. Controlling magnets (v) fitted to sliding rings on the suspension tube afford means of adjusting the sensitiveness of the astatic system.

The astatic system consists of two small disc magnets identical in size, shape and magnetic strength, with their poles in opposite directions: these are rigidly attached, one below the other, to a vertical stem. To the upper portion of the stem is fixed a cross piece which hooks on to a stirrup fixed to the lower end of the suspension wire, and the lower end of the stem carries a mirror (w) below which are attached four vanes the object of which is to help, by their resistance to the air, in bringing the magnetic system quickly to rest. A rod (x) attached to a split-ring at the base of the instrument carries a scale (y) and telescope (z) which are balanced by a counterpoise at the opposite end. The scale is viewed through the telescope by reflection from the mirror, so that any deflection of the mirror causes an apparent movement of the scale.

The principle of the Earth Inductor is briefly as follows:—Unless the axis of the coil is parallel to the lines of force of the Earth's magnetism when the coil is rotated it will cut the lines of force and alternating currents will be induced in the coil. The currents so

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generated in the coil are changed by the commutator into a direct continuous current which is conducted by wires to the galvanometer. If, however, the axis of the coil is in the magnetic meridian and inclined at the angle of true dip no current can be induced as the lines of force are not cut, but if on the other hand there is any deviation in the inclination of the axis of the coil from the true dip, currents will be generated and will be detected by the sensitive galvanometer. By successive trials a setting of the vertical circle is found at which no deflection is produced on rotating the coil, showing that the axis of the coil is inclined at the true angle of dip.

The observations for determining the dip with the Earth Inductor are made as follows: –

The axis of the ring bearing the coil is levelled by means of a striding level, the level is then replaced by a compass and the horizontal circle is rotated in azimuth until the compass needle coincides with the magnetic meridian, the reading on the horizontal circle is then noted: this reading increased or decreased by 90 degrees, according as the vertical circle is to face East or West, is set on the horizontal circle and thus the axis of the coil is placed in the magnetic meridian.

(1) The observation is begun with the vertical circle on the East side. The axis of the coil is made vertical by means of the level attached to the inside of the coil and the reading by both microscopes of the vertical circle recorded, first with the face of the coil marked A facing East and then with the face marked B facing East.

(2) The axis of the coil is placed as nearly as is known in the plane of the dip and clamped. The coil is then rotated clockwise and the inclination of the axis altered by means of the micrometer screw until a setting is found at which no deflection is indicated in the galvanometer; similarly a setting is found when the coil is rotated counter-clockwise. If these settings are not the same the axis of the coil is not exactly in the magnetic meridian and the horizontal circle is moved slightly in azimuth until by trial the settings are found to be in good agreement. The observation is then begun to determine the dip, by rotating the coil first clockwise and then counter-clockwise and noting the times and recording the vertical circle readings when there is no deflection of the scale in the galvanometer. This is twice repeated with the coil rotated in opposite directions each time.

(3) Repeat (1) beginning with the face of the coil marked B to the East and end with the face marked A to the East.

(4) Now with the vertical circle on the west side repeat the process as in (1), (2) and (3).

From the mean of the readings of the vertical circle with circle East and inductor coil vertical subtract 90 degrees and to the mean with circle West add 90 degrees, these will give the deduced circle readings with the inductor coil horizontal: the difference between each of these deduced readings and the corresponding mean readings of the inclination of the axis of the coil in the meridian with circle East and West respectively will give the value of dip at the mean time of the observation. A specimen observation is given in Magnetic Form No. 4 A.

PROCEDURE IN THE FIELD AND METHOD OF OBSERVING

The outfit of a magnetic observer usually consists of (1) a theodolite, a chronometer beating half seconds, a barometer, a thermometer, bull's eye lamps and a referring mark. (2) a magnetometer, a dip circle, and an observatory tent. A set of observations at each station comprises (a) astronomical observations for Time and Azimuth, and also for Latitude when necessary, (b) a double set of declination observations, a double set of deflections preceded and followed by a set of vibrations, and a double set of dip with two needles.

Each station is occupied as a rule for two nights and one whole day.

Every observer works out his observations before he leaves a station to make sure that the results are satisfactory. If he finds that the values of the constants derived from the observations are not within the prescribed limits he repeats the observations. Duplicate copies of his observations are submitted weekly to head quarters: these are computed in the office and are checked against his original observations on his return to head quarters.

Each observer before proceeding to and after returning from the field takes a complete set of observations for determining the differences between his instruments and the absolute instruments at the Dehra Dūn observatory, which are the adopted standards to which all others are referred. The comparisons consist of six double sets each of the three magnetic elements—declination, dip and horizontal force. One set of the horizontal force comprises two deflection observations preceded and followed by a vibration observation. In addition

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Magnetic 4 A.

Survey of India.

Original / Duplicate

Observations of ABSOLUTE DIP with the Inductor No. 30 *by Schulze, Date* 3rd June *1918.*

Base Station Dehra Dun { Lat. 30° 19' 19" / Long. 78 3 19 } Mean Dip 44° 45.85 at 14h 25m L. M. T.

Meridian Reading = 1° 12' Chronometer No. 3038 Error − 2 m

CIRCLE EAST

Approx. setting of Asimuth Circle = (Meridian Reading + 90°) = 91° 12'

True " " = 91 15

Readings of the Vertical Circle with the axis of the Inductor coil vertical.

	Position	Circle Readings	Mean
At Commencement	I	0° 0·2 / 0·4	0 0·3
	II	0·0 / 0·0	0·0
At End	II	0·0 / 0·0	0·0
	I	0·0 / 0·0	0·0

Mean of the Circle Readings = (a) = 0° 0·1

Deduced Circle Reading with the Inductor coil horisontal (a − 90°) = (b) = 270° 0·1

Observations of Dip

Turning Crank	Time L. M. T.	Micr. Head	Circle Readings	Means a	Dip (a−b)
⤾	h m 14:26	8	314° 45·8 / 46·2	314° 46·0	44° 45·9
⤿	: "	"	45·8 / 46·2	46·0	45·9
⤾	:27	"	45·8 / 46·2	46·0	45·9
⤿	: "	"	45·8 / 46·2	46·0	45·9
⤾	:28	"	45·8 / 46·2	46·0	45·9
⤿	: "	"	45·8 / 46·2	46·0	45·9
Mean Time	h m 14:27				
Corrn.	+ : 2		Mean		44° 45·9
True L.M.T.	14:29				

CIRCLE WEST

Approx. setting of Asimuth Circle = (Meridian Reading − 90°) = 271° 12'

True " " = 271 12

Readings of the Vertical Circle with the axis of the Inductor coil vertical.

	Position	Circle Readings	Mean
At Commencement	I	0° 0·0 / 0·1	0 0·1
	II	0·0 / 0·1	0·0
At End	II	0·2 / 0·2	0·2
	I	0·2 / 0·2	0·2

Mean of the Circle Readings = (a') = 0° 0·1

Deduced Circle Reading with the Inductor coil horisontal (a' + 90°) = (b') = 90° 0·1

Observations of Dip

Turning Crank	Time L. M. T.	Micr. Head	Circle Readings	Means a'	Dip (b'−a')
⤾	h m 14:18	10	45° 14·3 / 14·4	45° 14·4	44° 45·7
⤿	: "	"	14·3 / 14·4	14·3	45·8
⤾	:19	"	14·3 / 14·4	14·4	45·7
⤿	: "	"	14·3 / 14·4	14·3	45·8
⤾	:20	"	14·3 / 14·4	14·4	45·7
⤿	: "	"	14·3 / 14·4	14·3	45·8
Mean Time	h m 14:19				
Corrn.	+ : 2		Mean		44° 45·8
True L.M.T.	14:21				

Observed by Sri Bhar *Recorded by* G. Datt *Checked by* _____

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ten sets of vibrations are taken by chronograph, with a deflection observation at the 22·5 cms distance between every two sets of vibrations; this is to obtain an accurate determination of the magnetic moment (m) and to ascertain the personal error of an observer in his "eye-and ear" observations.

The error and rate of the observer's chronometer is found by comparison against the sidereal clock at the Dehra Dūn astronomical observatory during the 8 or 10 days occupied in taking comparative observations with the magnetic instruments.

Astronomical observations.—As a rule observations in the field for time and rate and for azimuth are taken at each magnetic station, and on some occasions latitude is observed. The observations have usually been made with a 6-inch transit theodolite the tripod stand of which rested on three wooden pegs driven firmly into the ground. Small incisions made in the centre of the pegs to receive the points of the metal shoes of the stand serve to prevent slipping and to ensure that the stand if removed and subsequently replaced should occupy exactly the same position; this is of importance in azimuth observations.

Time observations were made to East and West stars near the prime vertical. The two values of the chronometer error so obtained seldom differed from each other by more than two seconds. If stars were not available owing to clouds the sun was observed before and after its meridian passage.

All chronometers were kept to within one minute of Madras time, Madras local mean time being the Indian standard time during the earlier years of the survey.

The Latitude and Longitude of each station were scaled off accurately from maps on a scale not smaller than 1 inch = 4 miles, and the position of the station marked on the map, all Longitudes being recorded in terms of Greenwich. In case of doubt as to the exact position of a station on the map an observation for Latitude is made either to Polaris or to north and south stars by the method of circum-meridian altitudes.

The observations for azimuth were invariably taken to Polaris, the time being known, or to a pair of east and west stars: observations to the sun were permitted only in dull weather when the stars were obscured.

Instead of observing the azimuth from the station to the referring mark (R.M.) it was found more convenient in practice to determine the reverse azimuth from the R.M. to the station. The theodolite stand was erected in a convenient position generally from 300 to 400 yards away from the station and a mark of a simple design was placed vertically on the central aperture in the tripod head and used as the R.M. from the magnetic station. When the observation for azimuth is taken the R.M. is removed, the theodolite is placed on its stand and the R.M. on the magnetometer stand at the station. Since the observation is taken at night a luminous R.M. is needed, consequently the R.M. is constructed of a horizontal plate which carries a vertical metal disc with a small central opening behind which a bull's eye lamp is placed. Under the horizontal plate is a socket which fits the central apertures in the tripod heads of both the theodolite and magnetometer stands.

Magnetic observations.

The magnetic observations were made in a tent suitably constructed for the purpose, the tent being used to afford protection against sun, wind and rain. The magnetometer stand was always set at a convenient height above the ground to permit of the observations being taken with the observer seated. The legs of the stand rested on pegs driven into the ground. The same stand was used for both the magnetometer and dip circle.

Declination.

The first step is to lay out a referring (R.M.) and to determine its azimuth by observations taken with a theodolite, as already described. After setting up and adjusting the magnetometer the R.M. is intersected and the circle reading noted; the suspension ribbon is freed from torsion by means of the plummet; the plummet is then removed, the magnet suspended, and the upper plate of the magnetometer rotated until the cross lines on the magnet are approximately in the centre of the telescope scale. With the slow motion screw the cross lines on the magnet are made to coincide with the first, second or third scale division on the left of the centre division, and again with the corresponding scale division, on the right, the circle being read at each coincidence and the time noted. Knowing the value of a scale division the correction is applied to reduce the readings to zero or centre of the scale. If the two reduced readings do not agree within 20″ the observation is taken again. The operation is then repeated with the magnet turned round 180° in its sheath; the mean of the four readings, each of which is corrected to the zero of the scale, gives the corrected circle reading

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of the magnetic meridian at the mean time of the four readings. The R.M. is again intersected and the circle reading noted. The difference between the corrected circle reading of the magnetic meridian and the reading of the circle for the geographical meridian gives the magnetic declination. The position of no torsion is again determined at the end of the observation and if any appreciable error is indicated in the second determination the necessary correction is calculated from the torsion observation. This correction applied to the uncorrected declination gives the absolute declination at the time of observation.

The object of turning the magnet 180° in its sheath is to eliminate the angular error due to the non-coincidence of the line of optical collimation of the magnet with its magnetic axis; the difference between the mean values of the first and the inverted position of the magnet, or the collimation angle as it is termed, is never allowed to exceed 20″ of its previous mean value; if it does, a second complete observation is taken.

The whole observation occupies about 20 minutes, but the four intersections of the magnet do not take more than 5 or 6 minutes.

The specimen form No. 1 explains itself and the large Roman numerals show the order in which the various operations are performed.

Horizontal Force Observations.—This consists of the determination of the ratio $\frac{m}{H}$ by the deflection observation and of the product mH by the vibration experiment, where m denotes the magnetic moment of the magnet and H the earth's horizontal force.

Observation of mH.—Form No. 2 shows the method of booking a vibration observation. The observation is performed as follows:—

After setting up and adjusting the magnetometer and removing torsion from the suspension fibre the collimator magnet is suspended and made to vibrate through an arc of about 50′ on each side of the middle line of the scale and the times of every 9th passage of the vertical cross wire of the magnet recorded, up to the 117th. The time of the first or zero transit subtracted from the 54th gives the time for 54 vibrations and this added to the time of the 108th vibration gives the time at which the 162nd transit may be expected. Every 9th passage starting from the 162nd is again recorded till the 279th. Subtracting in succession the time of the zero transit from the 162nd, the 18th from the 180th, the 36th from the 198th etc. a series of differences is obtained each difference being a measure of the time of 162 vibrations. This series furnishes 14 independent determinations of the time of 162 vibrations, 7 of which are taken when the vertical cross wire of the vibrating magnet is apparently moving to the right and 7 when it appears to be moving to the left. The mean of each of the 7 values is taken and the mean of these two means divided by 162 determines the time of one vibration.

Should the highest and lowest values for 162 vibrations differ by 0·5 second or more, which seldom occurs, the result is considered unsatisfactory and a fresh observation is made.

The observation takes from 12 to 13 minutes, but quick and experienced observers can record the time of every 7th passage of the magnet; this reduces the time of the experiment to about 10 minutes.

The formulæ employed in the reduction of the observation are as follows:—

The first corrections to be applied to the vibration observation are for the chronometer rate and arc of vibration.

$$T_1 = T_0 \left\{ 1 - \frac{s}{86400} - \frac{aa'}{16} \right\}$$

where T_0 = the observed time of one vibration.

s = the rate of the chronometer.

a and a' = initial and final semiarcs of vibration expressed in minutes.

T_1 = the time of one vibration corrected for these two sources of error.

The next corrections are due to (1) the torsion of the phosphor-bronze ribbon, (2) the temperature of the magnet and (3) the induction effect of the Earth's magnetism on the magnet.

$$T^2 = T_1^2 \left\{ 1 + \frac{F}{mH} - Q(t - t_0) + \mu \frac{m_1}{H_1} \right\};$$

$$mH = \frac{\pi^2 K}{T^2}.$$

where T = Time of vibration, for infinitely small arc, corrected for rate of chronometer, temperature, torsion of the suspending thread, and magnetic induction.

$\frac{F}{mH}$ = Ratio of the torsion couple of the suspending thread to the

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To face P. 14 of the Record Vol. XIX (Magnetic).

Magnetic No. 1.

Survey of India.

Original / Duplicate

Observations of ABSOLUTE DECLINATION *with Magnetometer No.* 4 *by* T. Cooke & Sons. *Date* 16th March 1908.

Station Nawnglayaw (No. 1155) { Lat. 21° 38′ 17″ / Long. 97 44 30 } Zero Reading (*i. e.* Centre of Scale) = 50d Temperature = 11°.2 C

Chronometer No. 2812 Error −1h 10m Magnet No. 41 suspended. 1 of Scale = 84′.6

Readings of Referring Mark.

		Reading of Verniers	Mean of Verniers	Scale Reading	† Correction to Zero Reading	Corrected Circle Reading
I	Before "Plummet swings at commencement."	111° 30′ 20″	° ′ ″ 111 30 0	d 49·0	′ ″ +1 25	° ′ ″ 111 31 25
		29 40				
		33 10	32 50	51·0	−1 25	31 25
		32 30				
VI	After "Plummet swings at end."	111 28 50	28 30	48·0	+2 49	31 19
		28 10				
		34 20	34 5	52·0	−2 49	31 16
		33 50				

Mean of Readings of R.M. = 111° 31′ 21″ (*a*)

Azimuth of R. M. (from S.) = 27 7 23 (*b*)

‖ Meridian Reading of Circle = 84 23 58

Plummet swings at commencement (Position of zero torsion = 180°)

II

Setting of Torsion head			Mean of (1) & (3)	Mean of (2) & (4) i.e. position of rest
308°	1st swing‡	85°.7 (1)		
	2nd „	270·3 (2)	88°.3 (4)	179°.3 (5)
	3rd „	90·9 (3)		

To eliminate torsion in the ribbon, alter the "setting of torsion head" by 180° − angle (5), adding for a + sign and subtracting for a − sign.

"Setting of torsion head for zero torsion" is now 309°

III Observations of Declination.

Apparent	Time	Reading of Verniers	Mean of Verniers	Scale Reading	† Correction to Zero Reading	Corrected Circle Reading	‖ Meridian Reading of Circle	Declination ¶
	h m	° ′ ″	° ′ ″	d	′ ″	° ′ ″	° ′ ″	° ′ ″
Mark Below	5 35	85 12 30	85 12 15	49·0	+1 25	85 13 40	84 23 58	0 49 42
		12 0						
	36	15 30	15 15	51·0	−1 25	13 50		52
		15 0						
Mark Above	42	85 6 30	6 20	48·0	+2 49	9 9		45 11
		6 10						
	43	12 10	11 55	52·0	−2 49	9 6		8
		11 40						
	156							

5 39	= Mean of times to nearest ½ minute	Mean with Mark Below (6)	= 0 49 47
		„ „ Above (7)	= 45 10
−1 10	= Error of Chrn. „ „	E/W Declination (uncorrected)	= 0 47 29
		** Correction for Torsion	= − 1
6 49	= True L.M.T. of Obsn. „ „	¶ East/West DECLINATION	= 0 47 28

Magnetic collimation angle = ½ [(6) − (7)] = − 2′ 19″

IV Observations of Torsion.

Setting of Torsion head for Zero torsion	Circle turned	Scale Reading	Means of pairs of 0°	Diff. of preceding and reading of 180°	Sum of quantities in last col.
° 309		d	d	d	= 4·63d / Value of 90° of torsion
	0°	51·00			
	+180°	48·65	50·98	2·33	= Sum / 4
	0°	50·95			= 1·16d
	−180°	53·25	50·95	2·30	= 1′.64
	0°	50·95			

Correction for Torsion.

** Correction = $-\frac{1}{4}\left[\frac{\text{angle of torsion}}{90^\circ} \times \text{Value of } 90^\circ \text{ of torsion}\right]$

$= -\frac{1\cdot6 \times 6o \times 1\cdot64 \times 6o}{4 \times 90 \times 6o} = 0''.9$

$= -\ 0'\ 1''$

Note.—When the torsion angle is E/W the sign is −/+ for East Declination and +/− for West Declination.

V Plummet swings at end.

Setting of Torsion head for Zero torsion			Mean of (1) & (3)	Mean of (2) & (4)	Angle of Torsion East or West ‡
°	1st swing‡	82°.8 (1)			
	2nd „	278·1 (2)	85°.0 (4)	181°.6 (5)	E/W 1°.6
4	3rd „	87·2 (3)			

Observed by E. C. de Bond.

Recorded by Abdul Rahman

Checked by Zafar ahmed & G. Batta.

* From table 2.

† The correction is −/+ according as the scale reading is greater/less than the zero reading.

‡ The amplitude of the swings should not exceed 180°. Then if the plummet is inserted in the chuck (the marked side of which must always face the open side of the box) so that the 180° division of the plummet is towards the telescope, the torsion angle is the difference of the angle (5) from 180° and is E/W according as the angle (5) lies between 180° & 270°/90° & 180°.

‖ Meridian Reading of Circle = Reading of Circle when telescope is pointing true South, and (for Circles divided clockwise) = (*a*) − (*b*) / 360° + (*a*) − (*b*) according as (*a*) is greater/less than (*b*).

¶ The Declination is East/West according as the "Corrected Circle Reading" is greater/less than the "Meridian Reading of Circle."

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magnetic directive couple. (This is obtained from the forumla $\frac{F}{mH} = \frac{u}{90°-u}$, where u = the angle in degrees through which the magnet is deflected by a twist of 90° of the thread).

Q = the temperature coefficient.

t = temperature at the time of observation.

t_0 = the standard temperature, i.e 0° cent.

μ = the increase in the magnetic moment of the magnet produced by the inducing action of a magnetic field of unit strength, in the C.G.S. system of absolute measurement.

K = the moment of inertia of the magnet, including its suspending sheath and other appendages.

π = Ratio of the circumference to the diameter of a circle.

$\frac{m_1}{H_1}$ is taken from the following deflection observation.

Observation of $\frac{m}{H}$.—In this observation, taken immediately after the vibration experiment, the short magnet is suspended in the magnetometer, while the long or vibration magnet is supported "end on" in the sliding box on the deflection bar in the same horizontal plane as the short magnet, at different distances from it. The deflections of the suspended magnet from the magnetic meridian are observed, and from these the required ratio of $\frac{m}{H}$ is deduced by the formula given below.

The distances at which the deflecting magnet is placed on the deflection bar are 22·5, 30 and 40 centimeters, and observations are made with it at these distances on each side (East and West) of the suspended magnet to correct for unavoidable errors of graduation etc.

In each position two observations are made, one with the north end of the deflecting magnet east, and the other with the north end west.

The formula used in the computation is:—

$$\frac{m_1}{H_1} = \frac{I}{2} r^3 \sin u \left\{ 1 - \frac{2\mu}{r^3} - Q\,(t - t_0) \right\}^{-1}$$

$$\frac{m}{H} = \frac{m_1}{H_1}\left(1 + \frac{P}{r^2} + \frac{Q}{r^4}\right)^{-1}$$

where $\frac{m_1}{H_1}$ = value of $\frac{m}{H}$ before the application of the correction $\left(1 + \frac{P}{r^2} + \frac{Q}{r^4}\right)^{-1}$

r = the distance of the centre of the deflecting from the centre of the suspended magnet.

u = the angle through which the deflected magnet is turned.

$1 - \frac{2\mu}{r^3}$ = the correction for induction.

$Q(t - t_0)$ = the correction for temperature.

P = a constant depending on the distribution of magnetism in the deflecting and the suspended magnets given by the equation

$$P = \frac{A - A^1}{\frac{A}{r^2} - \frac{A^1}{r_1^2}}$$

A and A^1 representing the values of $\frac{m_1}{H_1}$ for the distances r and r_1 respectively.

The inclusion of the nearest distance, viz., 22·5 centimeters, in the observations is merely to increase the size of the deflection angles measured, for the errors of intersection and of reading the verniers being the same in all positions, the percentage of error due to these causes varies inversely with the magnitude of the angle measured, and owing to the large value of H in India, the angle at 40 centimeters is generally less than 5 degrees with the magnets of the size used.

It is also necessary to retain the 40 centimeter distance to obtain data for evaluating the second term in the expression for the distribution coefficient $\left(1 + \frac{P}{r^2} + \frac{Q}{r^4} \text{ etc.}\right)^{-1}$.

The results of the observations at the 40 centimeter distance are, however, not used in the preliminary reduction in which the usual practice is to ignore all terms involving the fourth or greater power of "r" in the expression given above. This practice has been followed because it is most convenient to use the modified expression $1 - \frac{P}{r^2}$ which enables an

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observer to readily compute out his results immediately after taking the deflection observation to assure himself that the desired degree of accuracy in his observations has been attained.

The order in which the observations were taken originally are given below where it will be seen that the observations at the 22·5 centimeters distance are grouped together in the centre; above and below these are the observations at 30 cms., whilst those at 40 cms. are the beginning and end of the experiment.

Distance cms.	North end.
Magnet East.	
40	E
40	W
30	W
30	E
22·5	E
22·5	W
Magnet West.	
22·5	W
22·5	E
30	E
30	W
40	W
40	E

It has already been pointed out that the percentage of error of observation varies inversely as the size of the deflection angle, and the value of $\frac{m}{H}$ derived from the 22·5 centimeter distance must therefore have a greater weight than those at the 30 and 40 centimeter distances.

The arrangement of the observation shown above has been designed with the object of still further increasing the weight of $\frac{m}{H}$ at the near distance, for the shorter the time occupied by any set of observations the less is the chance of error arising from any irregularity in the values of the force during the time of observation.

The observations at the near distance were thus strengthened as far as possible, and a value of $\frac{m}{H}$ derived from this distance to determine values of m and H.

In the final reduction of m and H it is necessary to take into account the Q term as it is clear from experiment that this term is not negligible in the Cooke magnets.

It was found that the means of groups of values of P at the 22·5 and 30 cms. distances were practically the same but changes in P at 30 and 40 cms. distances were considerable, this indicated that a sufficiently accurate determination of P at 30 and 40 cms. were not being obtained to evaluate the Q term satisfactorily.

The above arrangement of the deflection observation, as far as the determination of Q is concerned, had the serious defect of diminishing the weight of the observations at 40 cms. except when the temperature and horizontal intensity vary uniformly or are constant throughout the observation; these conditions are exceptional, while the percentage of error of observation is about six times as great as at the shortest distance. Errors of observation are moreover influenced by changes of declination during the period occupied by the deflection experiment, which again diminishes the weight of P from the 30 and 40 cms. distances.

Without abandoning the order of observation which has been in force from the beginning of the survey the following modification was introduced in 1905 to ensure a value of P from 30 and 40 cms. with greater weight than had hitherto been obtained.

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Magnetic No. 2.

Survey of India.

Original Duplicate

HORIZONTAL INTENSITY.

Determination of TIME of VIBRATION and mH with Magnetometer No. 4 *by* T. Cooke & Sons. *Date* 15th March 1908.

Station Nawnglayaw No. 1155. Lat. 21° 38′ 17″ Long. 97 44 30

Chronometer No. 2812 Error = − 1m 10.0s Mag. Magnet No. 4 A suspended.

Rate (s) = + 0.3 Secs " One Division of Scale* = 1′ 41

Semi-arc of Vibration. Temperature of Magnet. Thermometer No. 4 B

† Mean Time of Experiment = 14h 25m.5 At Commencement ‡(a) 31°.0 = _____ 33°.0

† Error of Chronometer = − 1m 10.0 At Middle 33°.0

† True L.M.T. of Experiment = 15h 35m.5 At End (a′) 11°.1 = _____ 33°.0

§ Reading of Vertical Scale = 25.3 divisions ... $t = 33°.0 \pm 0°.1 = 32°.9$

Approximate Time of Vibration.

h m s

: : .

: : .

Time of 18 vibrations = _____ .

" 9 " = 24.30

Torsion Coefficient.

Reading of Torsion head	Circle turned	Scale Reading	Means of pairs of 0°	Diff. of preceding and following of 180°
		d	d	d
	0°	51.00		
309°	+ 180°	48.65	50.98	2.33
	0°	50.95		
	− 180°	53.25	50.96	2.30
	0°	50.95		

Sum of quantities in last col. = 4.63d

Value of 90° of torsion = $\frac{\text{Sum}}{4}$ = 1.16d = 1′ 64

TIME of VIBRATION.

Cross wires moving apparently to Right					Cross wires moving apparently to Left				
No. of Vibs.	Time of cross wires on magnet passing centre of scale	No. of Vibs.	Time of cross wires on magnet passing centre of scale	Time of 162 Vibns.	No. of Vibs.	Time of cross wires on magnet passing centre of scale	No. of Vibs.	Time of cross wires on magnet passing centre of scale	Time of 162 Vibns.
	h m sec.		m sec.	m sec.		h m sec		m sec.	m sec.
0	14:19: 4.25	162	26:22.95	7 : 18.70	9	14:19:28.65	171	26:47.25	7 : 18.60
18	19:52.95	180	27: 11.55	.60	27	20:17.25	189	27:35.95	.70
36	20:41.60	198	28: 0.30	.70	45	21: 6.05	207	28:24.65	.60
54	21:30.45	216	28:49.05	.60	63	21:54.80	225	29:13.45	.65
72	22:19.20	234	29:37.80	.60	81	22:43.60	243	30: 2.15	.55
90	23: 7.95	252	30:26.50	.55	99	23:32.30	261	30:50.95	.65
108	23:56.65	270	31: 15.25	.60	117	24:21.00	279	31:39.55	.55
Diff. for 54	2 :26.20		Sum = ¶	15	Diff. for 54	2:26.15		Sum = ¶	10
162 at	26 :22.85		Mean (1) =	7 : 18.621	171 at	26:47.15		Mean (2) =	7 : 18.614

$T_1 = T_0\left\{1 - \frac{s}{86400} - \frac{aa'}{16}\right\}$; $T^2 = T_1^2\left\{1 + \frac{F}{mH} - Q(t-t_0) + \mu\frac{H_1}{m_1}\right\}$; $mH = \frac{\pi^2 K}{T^2}$

(Table I) $1 - \frac{s}{86400}$ = 1.00000

(Table II) $-\frac{aa'}{16}$ = − .0

$1 - \frac{s}{86400} - \frac{aa'}{16}$ = 1.00000

(Table III) $1 + \frac{F}{mH}$ = 1.00030

(Table V) $-Q(t-t_0)$ = − .01502

** $+\mu + \frac{m_1}{H_1}$ = + .00344

$\left\{1 + \frac{F}{mH} - Q(t-t_0) + \mu + \frac{m_1}{H_1}\right\}$ = .98872

(See Constants) μ Log. = .89487

(From Deflection Obns.) $\frac{m_1}{H_1}$ Log. = 3.35804

** $\mu + \frac{m_1}{H_1}$ = .00344 Log. = $\bar{3}$.53683

sec.¶

(a) ½ {Mean (1) + Mean (2)} = 438.618 Log. = 2.642086 } 6 places

(b) Number of Vibrations = 162 ... Log. = 2.209515

(a) ÷ (b) = T_0 ... Log. = 0.43257 5 places

... ... Log. = .0

T_1 Log. = 0.43257

T_1^2 Log. = 0.86514

... ... Log. = $\bar{1}$.99507

T^2 Log. = 0.86021

(Table VI) $\pi^2 K$ Log. = 3.38005

$mH = \frac{\pi^2 K}{T^2}$ Log. = 2.51984

(From Deflection Obns.) $\frac{m}{H}$ Log. = 3.35803

$mH \div \frac{m}{H} = H^2$ Log. = .

H = _____ Log. = .

$mH \times \frac{m}{H} = m^2$ Log. = 5.87787

m = 868.84 Log. = 2.93894

* From table I. † To nearest ½ minute.

‡ The semi-arc at commencement should be from 35′ to 40′ if high power eyepiece is used or from 60′ to 70′ if the low power is used.

§ The telescope bubble must be in the centre of its run and the magnet swinging freely when this reading is taken.

‖ Correction from Table VII. ¶ To 3 places of decimals.

Computed and Compared by Zafar Ahmed *and* G. Datta

Observed by E. Cook Bond.

Recorded by Abdul Rahman

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To face P. 16 of the Record Vol. XIX (Magnetic).

Magnetic No. 3

Survey of India.

Original / Duplicate

Determination of ANGLE of DEFLECTION and $\frac{m}{H}$ with Magnetometer No. 4 *by* T. Cooke & Sons *Date.* 15 March

Station Nawnglayaw *No.* 1155 { *Lat.* 21° 38′ 17″ / *Long.* 97 44 30 } *L.M.T. of observation* ¶ h 15 m 57·0

Chrn. No. 2812 *slow / fast* h 1 m 10 *Mins.* *Therm. No.* 4B *Zero reading (i.e. Centre of Scale)* 50 d.

Magnet. No. 4A *deflecting.* *One Scale divn.* ° 84·6

Deflecting Magnet. Dist. in cms.	N. and	Temp. Cent.	Time h m	Readings of Verniers ° ′ ″	Mean of Verniers ° ′ ″	Scale reading	† Corrn. to zero reading ′ ″	No. Obsn.	Corrected Circle Reading ° ′ ″	Means and differences ° ′ ″
East		°								Mean of 5 and 8.
40	E.	32·6	14 :35	89 27 :50 / 27 :20	89 :27 :35	49·0	− 0 : 0	1	89 :27 :35	108 :59 :55
										Mean of 6 and 7.
40	W.	32·3	:38	81 24 :50 / 24 :10	81 :24 :30	49·05	− 0 : 5	2	81 :24 :25	61 :51 :47
										Difference.
30	W.	32·2	:40	75 50 :30 / 50 .30	75 :50 :30	49·05	− 0 : 5	3	75 :50 :25	47 : 8 : 8
										Half Diff. = $u_{22\cdot5}$
30	E.	32·0	:42	95 2 :20 / 2 :10	95 : 2 :15	49·0	− 0 : 0	4	95 : 2 :15	23 :34 : 4
										Mean of 4 and 9.
22·5	E.	32·0	:44	108 53 :0 / 52 :50	108 :52 :55	49·0	− 0 : 0	5	108 :52 :55	95 : 4 :35
										Mean of 3 and 10
22·5	W.	31·9	:46	62 2 :40 / 2 :50	62 : 2 :45	48·95	+ 0 : 4	6	62 : 2 :49	75 :47 : 3
West										Difference
22·5	W	31·9	:47	61 40 :50 / 40 :30	61 :40 :40	48·95	+ 0 : 4	7	61 :40 :44	19 :17 :32
										Half Diff. = u_{20}
22·5	E.	31·9	:51	109 7 :10 / 6 :50	109 : 7 : 0	49·05	− 0 : 5	8	109 : 6 :55	9 :38 :46
										Mean of 1 and 12.
30	E.	31·9	:53	95 7 :0 / 6 :50	95 : 6 :55	49·0	− 0 . 0	9	95 : 6 :55	89 :28 :10
										Mean of 2 and 11
30	W.	31·9	:55	75 43 :30 / 43 :50	75 :43 :40	49·0	− 0 : 0	10	75 :43 :40	81 :23 :25
										Difference
40	W.	31·8	:56	81 22 :30 / 22 :20	81 :22 :25	49·0	− 0 : 0	11	81 :22 :25	8 : 4 :45
										Half Diff. = u_{40}
40	E.	31·8	:58	89 28 :50 / 28 :40	89 :28 :45	49·0	− 0 : 0	12	89 :28 :45	4 : 2 :23

Mean Temp. 32·02	14 :47·0	= Mean of times to nearest ½ minute	$u_{22\cdot5}$ =
Correction‡ − ·10	− 1 :10·0	= Error of Chrn. " "	u_{30} =
L M. Temp. 31·92	15 :57·0	= ¶ True L.M.T. " "	u_{40} =

Abstract ° ′ ″
23 :34 : 4
9 :38 :46
4 : 2 :23

Computation of *P*.

I. $P = 2664\cdot4(\log. A_1 - \log. A_2) - 10955(\log. A_1 - \log. A_2)^3 = s - b$

$\log. A_1$ = 3·36459 (r = 22·5 c ms.)

$\log. A_2$ = 3·36171 (r = 30 c ms.)

$\log. A_1 - \log. A_2$ = 0·00288 (1)

2664·4 log. = 3·42560

§ (1) log. = $\bar{3}$·45939

s log. = 0·88499 s = 7·67

10955 log. = 4·03968

(1)³ log. = $\bar{6}$·91878

b log. = $\bar{2}$·95841 b = 0·09

(From 22·5 and 30 c ms.) $P = s - b$ = 7·58

II. $P = 4736\cdot7(\log. A_2 - \log. A_3) - 19476(\log. A_2 - \log. A_3)^3 = s - d$

$\log. A_2$ = 3·36171 (r = 30 c ms.)

$\log. A_3$ = 3·35995 (r = 40 c ms.)

$\log. A_2 - \log. A_3$ = 0·00176 (2)

4736·7 log. = 3·67548

§ (2) log. = $\bar{3}$·24551

s log. = 0·92099 s = 8·34

19476 log. = 4·28961

(2)³ log. = $\bar{6}$·49102

d log. = $\bar{2}$·78053 d = 0·06

(From 30 and 40 c ms.) $P = s - d$ = 8·28

NOTE.—Keep a, b, s and d to 3 places of decimals.

° From Table II.

† The correction is $\frac{-}{+}$ according as the scale reading is $\frac{\text{greater}}{\text{less}}$ than the zero reading.

‡ Correction from Table VII.

§ Log. A_1, log. A_2 and log. A_3 are to be treated as natural numbers and the log. of their diff. entered.

Computation of $\frac{m}{H}$.

$\frac{m_1}{H_1} = \frac{1}{2}r^3 \sin u \left\{1 - \frac{2\mu}{r^3} - Q(t - t_0)\right\}^{-1} = A_1$; $\frac{m}{H} = \frac{m_1}{H_1}\left(1 - \frac{P}{r^3}\right)$

	r = 22·5	r = 30	r = 40
Table IV ... ... $1 - \frac{2\mu}{r^3}$ =	0·99862	0·99942	0·99973
Table V ... $-Q(t - t_0)$ =	− 0·01456	− 0·01456	− 0·01456
$1 - \frac{2\mu}{r^3} - Q(t - t_0)$ =	0·98406	0·98486	0·98517
$\left\{1 - \frac{2\mu}{r^3} - Q(t - t_0)\right\}$ log. =	$\bar{1}$·99302	$\bar{1}$·99337	$\bar{1}$·99351
$\left\{1 - \frac{2\mu}{r^3} - Q(t - t_0)\right\}^{-1}$ log. =	0·00698	0·00663	0·00649
Table VI ... ... $\frac{1}{2}r^3$ log. =	3·75573	4·13090	4·50559
Sin u log. =	$\bar{1}$·60188	$\bar{1}$·22418	$\bar{2}$·84787
Sum = log. A or log. $\frac{m_1}{H_1}$ =	3·36459	3·36171	3·35995
$1 - \frac{P}{r^3}$ □ log. =	$\bar{1}$·99344	. .	.
$\frac{m}{H}$ log. =	3·35803 ::	.	.

□ The mean value of P (From 22·5 and 30 c ms.) derived from the season's observations is used.

Observed by E. C. Bond.

Computed by Abdul Rahman

Checked by Zafar Ahmed & G. Batta

Computation of m and H.

From 1st set of Vibrations. L. M. T. = h m

~~(From Vibration form) mH~~ *Mean* m log. = 2·93893

$\frac{m}{H}$ :: log. = 3·35803

$mH + \frac{m}{H} = H^2$ log. =

H = ·38098 log. = $\bar{1}$·58090

$mH \times \frac{m}{H} = m^2$ log. =

m = log. =

From 2nd set of Vibrations. L. M. T. = h m

(From Vibration form) mH log. =

$\frac{m}{H}$ :: log. =

$mH + \frac{m}{H} = H^2$ log. =

H = log. =

$mH \times \frac{m}{H} = m^2$ log. =

m = log. =

:: The value of $\frac{m}{H}$ derived from the deflection angle $u_{22\cdot5}$ is to be used, and not the mean value derived from the three angles.

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	Distance cms.		North end
	Magnet East		
I	40	...	... E
	40	...	... W
	30	...	... W
	30	...	... E
	22·5	...	... E
	22·5	...	... W
	Magnet West		
II	22·5	...	... W
	22·5	...	... E
	30	...	... E
	30	...	... W
	40	...	... W
	40	...	... E
	Magnet East		
III	40	...	... E
	40	...	... W
	30	...	... W
	30	...	.. E
	22·5	...	... E
	22·5	...	... W

I and II were combined to form one deflection observation, II and III a second deflection, a vibration being made before I and after III; this gives two values of P at 22·5 and 30 cms. which are usually in good agreement, and one reliable value at 30 and 40 cms. where they are grouped together between II and III.

Form No. 3 shows the method of booking the deflection observations.

In view of the Q term in the expression $\left(1 + \frac{P}{r_2} + \frac{Q}{r_4} \ldots\right)^{-1}$, being taken into account in the final reduction of the observations, the additional observation of deflection necessary to obtain a better determination of P at 30 and 40 cms. has been adhered to, as the value of P at these distances which are grouped together are far more reliable and the extra time occupied in III is only about 12 minutes.

P and Q are computed from the formula given by Dr. Chree (Philosophical Magazine, S. 6. Vol. 8, No. 44 August 1904),

$$\text{where } P = \frac{W_1 r_1^4 (r_3^4 - r_2^4) + W_2 r_2^4 (r_1^4 - r_3^4) + W_3 r_3^4 (r_2^4 - r_1^4)}{W_1 r_1^4 (r_2^2 - r_3^2) + W_2 r_2^4 (r_3^2 - r_1^2) + W_3 r_3^4 (r_1^2 - r_2^2)};$$

$$Q = \frac{r_1^2 r_2^2 r_3^2 W_1 r_1^3 (r_2^2 - r_3^2) + W_2 r_2^2 (r_3^2 - r_1^2) + W_3 r_3^2 (r_1^2 - r_2^2)}{W_1 r_1^4 (r_2^2 - r_3^2) + W_2 r_2^4 (r_3^2 - r_1^2) + W_3 r_3^4 (r_1^2 - r_2^2)}.$$

The formula $\frac{1}{2} r_1^3 \sin u \left\{1 - \frac{2\mu}{r_1^3} - Q (t - t_0)\right\}$ for computing $\frac{m}{H}$ is put for shortness equal to W_1 and similarly for W_2 and W_3; the suffixes 1, 2, 3, being employed to denote the deflections at three distances r_1, r_2, r_3.

W_1, W_2, W_3 are means from a number of observations and r_1, r_2, r_3 are the distances corresponding to 22·5, 30 and 40 cms, corrected for bending of the deflection bar.

The procedure adopted is as follows:—The individual values of log W_1, log W_2 and log W_3 are written down and the differences log W_1 − log W_2, log W_2 − log W_3 and log W_1 − log W_3 are taken out. A scrutiny of these differences enables indifferent observations to be rejected. Means of log W_1 − log W_3 and log W_2 − log W_3 are then taken.

In order to facilitate these computations both the numerators and denominators are divided by W_3 so that the expressions for P and Q would contain log W_1 − log W_3 and log W_2 − log W_3 which are much smaller terms and easier to deal with than log W_1, W_2 etc.

Mean values of log W_1 − log W_3 and log W_2 − log W_3 from a year's observations are used to compute P and Q if there is no marked change in these values throughout the year to alter the distribution coefficient. If, however, there is evidence of any change the mean values for such periods during which a change has occurred are taken to determine the new distribution coefficient to be applied to the value $\frac{m_1}{H_1}$ for the respective periods. $\frac{m}{H}$ from the nearest distance is used in the final reduction of m and H, being preferable to the mean value of $\frac{m}{H}$ derived from the three distances, as it tends towards increased accuracy, as already explained.

Dip observations.—Dip is determined in the field with the Dover Dip Circle placed on a magnetometer tripod, its axis of rotation occupying the same position as that of the

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magnetometer on the stand, so that the same referring mark (R.M.) employed in the declination observation can also be used for setting the dip needle in the magnetic meridian with the sights provided for the purpose.

The dip observations are taken in the magnetic meridian with two needles and the work is arranged symmetrically so that the mean result from both needles refer to a mean time common to both as will be seen in the specimen form No. 4 which is used for recording the observations.

The permanent adjustments having once been made seldom require attention. The only adjustments necessary before commencing observations are:—

(a) Focussing the microscope and vernier lenses;

(b) Levelling the instrument, so that the axis about which the upper part of the instrument turns is truly vertical.

(c) Determining the plane of the magnetic meridian and the corresponding reading of the horizontal circle, which however is only necessary if the dip has for any reason to be observed before a declination is taken.

Before commencing observations each needle is magnetized in the following manner:— It is placed in a groove cut in a small wooden block into which it fits with its upper surface flush with the surface of the block and is held tight by a holder with two pins which slip into two slots in the block. Two bar magnets, held one in each hand, nearly in a vertical position, are drawn lightly along the needle from the centre towards its ends, the south pole of one of the bar magnets being drawn say over the A end of the needle which becomes the north end and the north pole of the other over the opposite end marked B which becomes the south end: this is repeated 10 times; the needle is then turned over back to front and a similar operation performed again.

The magnetic meridian with a dip needle is determined in the following manner:— After cleaning the agate knife edges with soft cork and also the axles of the needle by inserting them gently into soft cork or pith the lifter is raised and the needle placed on it with the lettered side facing the vertical circle. (The lettered side marked A at one end and B at the other is called the face). The upper and lower verniers of the vertical circle are next set to 90 degrees and the instrument turned in azimuth at right angles to the meridian with the face (the side bearing the vertical circle) towards the south. The needle is then lowered on the agate edges, and after raising and lowering it again by the lifter once or twice to see that it swings freely, is brought to rest by slightly raising and lowering the lifter a few times. The lower extremity of the needle is then bisected by the thread in the field of the lower microscope by means of the slow motion screw of the horizontal plate and the reading of the horizontal circle recorded, as shown at the top of the dip form No. 4. The needle is again raised and lowered by the lifter and another intersection taken and recorded, the upper end of the needle is similarly bisected with the upper microscope and the readings recorded. The instrument is then turned 180° in azimuth facing north and the same operation repeated. The needle is next reversed so that the back of it is turned to the face of the instrument and the whole of the operation performed as above with the instrument facing once north and once south. The mean of the four mean values, as will be seen on form No. 4, is the reading of the magnetic prime vertical; and as the horizontal, like the vertical circle, is graduated by quadrant from 0° to 90°, the same reading in the next quadrant of the horizontal circle will be the setting for the magnetic meridian.

Having obtained the reading of the magnetic meridian either by the needle in the vertical position as described above or by intersection of the R.M. with the sights (if a declination observation has been taken previously) the actual dip is then observed in the following manner:—

(1) The instrument is turned into the magnetic meridian with its face to the magnetic east, the face of the needle being towards the face of the instrument with pole A of No. 1 needle dipping. The poles A and B are bisected by the lower and upper microscopes and the angle of inclination recorded. The process is repeated once again.

(2) The instrument is turned 180° in azimuth with its face to the magnetic west and observations taken as above.

(3) The face of needle is reversed and observation (2) is repeated.

(4) The instrument is turned with its face to magnetic east and observation (1) is repeated.

The time of the first bisection in (1) and the last bisection in (4) is recorded.

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Magnetic No. 4.

Survey of India.

Original / Duplicate

Observations of ABSOLUTE DIP with Circle No. 136 *by* Dover *Dated* 16th March 1908.

Station Nawnglayaw (No. 1155) { *Lat.* 21° 38′ 17″ / *Long.* 97° 44′ 30″ } Chronometer No. 2812 Error — h 1 m 10. Mean Dip 28° 37′·8 at 8h 13m·5 L.M.T.

Determination of Magnetic Meridian.

Face of Inst.	Face of Needle to Face of Inst.	Horizontal Circle Reading			Face of Needle Reversed	Face of Inst.	Horizontal Circle Reading		
South		46° 17′·0	46° 19′·5	46° 18′·3		North	46° 3′·0	46° 1′·0	46° 2′·0
		18′·0	20′·5	9′·3			4′·5	2′·5	3′·5
		Mean = a	46°	18′·8			Mean = a″	46°	2′·8
North		46° 6′·5	46° 4′·5	46° 5′·5		South	46° 21′·0	46° 24′·0	46° 22′·5
		7′·5	5′·5	6′·5			22′·0	24′·0	23′·0
		Mean = a′	46°	6′·0			Mean = a‴	46°	22′·8

Mean = $\frac{a+a'+a''+a'''}{4}$ = 46° : 13′ = a Setting of azimuth circle 90° + a =

Testing of sights

Intersection of R. M.† { 72 : 33 / : 33 / : }

Mean = 72 : 33 (a)

Angle M. S.—R. M.‡ = −26 : 20 (b)

Sum § = 46 : 13 (c) (algebraic)

Setting of Azimuth Circle = 46° 13′

† These intersections are made with the sights and must never be omitted.

‡ (b) is extracted (to the nearest minute) from the Declination observations of the same date. If it is negative and numerically greater than (a), the latter is to be increased by 360°, so that their sum (c) shall always be positive.

§ If the angle (c) be greater than 90°, it must be reduced by the largest multiple of 90° it contains, in order to obtain the Setting of Azimuth Circle.

OBSERVATIONS OF DIP.

Face of Needle to Face of Instrument

Face of Instrument		Needle No. □						Needle No. □					
		Time 6h 45m to 6h 52m			Time 7h 15m to 7h 21m			Time 6h 54m to 7h 1m			Time 7h 7m to 7h 13m		
		Poles direct A		dipping	Poles Reversed B		dipping	Poles direct A		dipping	Poles Reversed B		dipping
		Upper End	Lower End	Mean	Upper End	Lower End	Mean	Upper End	Lower End	Mean	Upper End	Lower End	Mean
East		28° 28′·0	28° 29′·0	28° 28′·5	28° 29′·5	28° 35′·0	28° 32′·3	28° 29′·0	28° 33′·5	28° 31′·3	28° 26′·5	28° 30′·5	28° 28′·5
		28′·0	29′·5	28′·8	29′·5	35′·0	32′·3	29′·0	33′·5	31′·3	26′·5	30′·5	28′·5
				.			.			.			.
				.			.			28 31′·3			.
		Sum =		.	Sum =		.	Sum =		.	Sum =		
		Mean = a =		28 28′·7	Mean = a =		28 32′·3	Mean = a =		.	Mean = a =		28 28′·5
West		28 47′·5	28 53′·5	28 50′·5	28 31′·0	28 39′·0	28 35′·0	28 42′·5	28 50′·5	28 46′·5	28 45′·5	28 52′·5	28 49′·0
		47′·0	54′·0	50′·5	30′·5	38′·5	34′·5	42′·5	48′·5	45′·5	45′·5	53′·0	49′·3
				.			.			.			
				.			.			.			
		Sum =		.	Sum =		.	Sum =		.	Sum =		
		Mean = a′ =		28 50′·5	Mean = a′ =		28 34′·8	Mean = a′ =		28 46′·0	Mean = a′ =		28 49′·2

Face of Needle Reversed

Face of Instrument		Needle No. □						Needle No. □					
		Time 6h 45m to 6h 52m			Time 7h 15m to 7h 21m			Time 6h 54m to 7h 1m			Time 7h 7m to 7h 13m		
		Poles direct A		dipping	Poles Reversed B		dipping	Poles direct A		dipping	Poles Reversed B		dipping
		Upper End	Lower End	Mean	Upper End	Lower End	Mean	Upper End	Lower End	Mean	Upper End	Lower End	Mean
West		28 35′·0	28 42′·0	28 38′·5	28 39′·5	28 46′·5	28 43′·0	28 37′·0	28 43′·5	28 40′·3	28 30′·5	28 36′·0	28 33′·3
		34′·5	41′·5	38′·0	38′·0	44′·5	41′·3	36′·0	43′·0	39′·5	29′·5	34′·5	32′·0
				.			.			.			.
				.			.			28 39′·9			.
		Sum =		.	Sum =		.	Sum =		.	Sum =		.
		Mean = a″ =		28 38′·3	Mean = a″ =		28 42′·2	Mean = a″ =		.	Mean = a″ =		28 32′·7
East		28 41′·0	28 44′·5	28 42′·8	28 24′·5	28 30′·5	28 27′·5	28 33′·5	28 38′·0	28 35′·8	28 40′·0	28 45′·0	28 42′·5
		42′·0	45′·0	43′·5	24′·5	30′·5	27′·5	33′·5	37′·5	35′·5	40′·5	47′·0	43′·8
				.			.			.			.
				.			.			.			.
		Sum =		.	Sum =		.	Sum =		.	Sum =		
		Mean = a‴ =		28 43′·2	Mean = a‴ =		28 27′·5	Mean = a‴ =		28 35′·7	Mean = a‴ =		28 43′·2
		a″ =		38′·3	a″ =		42′·2	a″ =		39′·9	a″ =		32′·7
		a′ =		50′·5	a′ =		34′·8	a′ =		46′·0	a′ =		49′·2
		a =		28′·7	a =		32′·3	a =		31′·3	a =		28′·5
		Sum =		0′·7	Sum =		16′·8	Sum =		32′·9	Sum =		33′·6
		Mean = a =		28 40′·2	Mean = β =		28 34′·2	Mean = a =		28 38′·2	Mean = β =		28 38′·4
					Do. = a =		40′·2				Do. = a =		38′·2
					Dip = $\frac{a+\beta}{2}$ =		28 37′·2				Dip = $\frac{a+\beta}{2}$ =		28 38′·3

Mean Time = h 7 m 3·5

Error of Chr. = 1·10

True L.M.T. = 8·13·5

□ When two needles are used, the observations must be taken in the following order:— 1. First needle poles direct. 2. Second needle poles direct. 3. Second needle poles reversed. 4. First needle poles reversed. The polarity of both needles is reversed before commencing 3.

Observed by E. C. Bond.

Computed and compared by Zafar Ahmed & G. Batta.

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In the next half of the observation the polarity of the needles is reversed by the bar magnet as already explained and the whole process with B dipping is carried out in a similar manner as with A dipping.

In the specimen form No. 4 the booking of a set of dip observations is shown.

For a complete observation of dip the whole of the process as with needle No. 1 is repeated with needle No. 2. The observations with the two needles are arranged in the following sequence :—

(a) Needle No. 1 A dipping.
(b) „ „ 2 A „
(c) Polarity of needles reversed.
(d) Needle No. 2 B dipping.
(e) „ No. 1 B „

The object of taking the observations in the above order is that the mean epoch for needle No. 1 shall be the same as that for needle No. 2.

The values for the dip obtained by the two needles will be very nearly the same. The mean of the two values is taken as the true dip.

DISTRIBUTION OF MAGNETIC STATIONS

1401 field stations and 80 repeat stations are distributed over the whole of India, Burma and Ceylon; 41 of these being in Ceylon and 4 in the Andaman Islands.

Declination, horizontal force and dip were observed at every station.

The field and repeat stations which number in all 1481 are comprised in an area of 1632000 square miles. The average density per station is therefore one in every 1102 square miles, which gives an average of nearly 4 stations per degree sheet. The density of the repeat stations if taken separately is one to every 20200 square miles, or an average of 3 stations to every $\frac{1}{\text{million}}$ sheet.

Field stations.—These are spaced at intervals of 30 to 40 miles apart, the distances depending on the nature of the country and means of transport available. The routes taken were chiefly by road and railway.

The distribution of the stations is shown on map No. 12, by small red dots with a number against each, the numbering being in the order in which the stations were visited for observations from the beginning of the survey. A circle round some of the dots indicates that observations were repeated at the stations so marked, whenever observers travelled over parts of the old routes for introducing extra stations where it was essential to fill in any wide gaps in the original distribution of stations, or, where observations were required at closer intervals in some magnetically disturbed localities. The reason for re-observing at some of these sites, whenever opportunities presented themselves, was to obtain more values for the better determination of the annual change, in addition to the values provided by the repeat stations which originally numbered only 23; it was, however, discovered later that no great reliability could be placed in the annual change values derived from the re-observed field stations owing to the uncertainty of the exact position of the original sites, since any slight deviation from the true position in a magnetically disturbed area gives a discordant result; it was therefore resolved to mark in a permanent manner all sites at which observations are repeated for the purpose of determining the annual change. In the case of field stations all that was considered necessary was to give as good a description as possible of the site to enable a future observer to locate it to within a few feet.

The descriptions of the field stations are not given in this report as these would occupy too much space. If at any time the descriptions should be required they can be obtained from the field books, in which sketches are also given showing the position of surrounding features and permanent objects with their bearings and distances.

Every care was exercised in the selection of sites for observations, and all disturbing influences such as railways, buildings, etc., were avoided. Whenever possible a locality was chosen the geological character of which was sedimentary or alluvial and, as far as all surface appearances showed, was free from any rocks of a magnetic nature.

Repeat Stations.—Besides the continuous observations at the Base stations observations were taken frequently at several well chosen and evenly distributed repeat stations in order to determine as satisfactorily as possible the annual changes in the magnetic elements for reducing the results of the survey to a common epoch. Originally the repeat stations in India and Burma numbered only 23; each of these stations consisted of three sites about a mile to a mile and a half distant from each other and the mean of the magnetic values obtained at each

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was used to represent the most probable value for the mean geographical position of the three sites; but, as the sites of many of the stations are not entirely free of local disturbances no distinct advantage was gained in observing at the three sites, and in order to save the additional time and labour involved it was decided to observe at one permanently marked site instead, in which case any local attraction may be supposed to be a constant quantity. The site which appeared, from the results in the past, to give the most normal values for the three elements was selected.

Since the 23 stations were too few in number to provide sufficient data for obtaining an accurate determination of the annual changes in the magnetic elements these were supplemented in 1910 by 50 selected field stations, all of which, spaced at distances varying from 150 to 200 miles apart, together with another established at Port Blair in the Andaman Islands, were marked by brick or concrete pillars 2 feet square, with the top surface flush with the gronnd. Experience showed, however, that the life of such marks was very short, many of them being tampered with or destroyed, and since there would be some difficulty in the future in identifying their exact positions, the 73 stations together with an extra one established later on close to the abandoned observatory of Barrackpore, were marked in a permanent manner in 1914-15 by substantial concrete pillars 3 feet × 1 foot × 1 foot in dimensions; two and a half feet of the pillar is embedded in the ground and half a foot projects above the ground level with the impression "G. T. S. Magnetic Station" inscribed on the upper surface. The pillars are entrusted to the local authorities for preservation so that there shall be no difficulty in the future in identifying the exact positions of the sites. The material for the construction of the pillars was tested, before being used, to make sure that none of the pillars would have any magnetic properties. Observations were taken at the sites both before and after the pillars were erected to ascertain whether any difference existed in the observed values. In normal areas no sensible error would result in the magnetic elements, at any one time, from a slight change of position, but in the many magnetically disturbed areas in India the error may vary to a considerable extent, it is therefore important that the exact site is used when observations are repeated at a station to ensure that reliable values of the magnetic elements are obtained for the satisfactory determination of the annual changes.

Experience showed that the magnetic elements are subject to appreciable changes in their rate of progression and that it is not possible to forecast with any degree of accuracy what the annual changes will be even in a few years time and it was therefore considered necessary to observe at short intervals at repeat stations in order to obtain reliable values of the average annual changes; five years was decided upon as being a suitable interval and the 74 repeat stations which were last visited in 1914-15 were therefore again observed at during the field season of 1919-20. Six additional stations, which were required for determining the course of the lines of equal annual changes with greater accuracy in particular areas, were also permanently marked and observed at: these extra stations brought the number of repeat stations up to 80. The repeat stations are shown in Map No. 12 in large red dots and are numbered with Roman numerals. It will be noticed that all the magnetic stations are on railways with the exception of one at Port Blair, three on the Burma coast and one at Bhamo in Upper Burma which are accessible only by steamer.

The descriptions of the stations, together with their distinguishing numbers and geographical co-ordinates and the true bearings and distances of permanent and conspicuous objects are given at the end of this report.

Detail Stations.—In addition to the field and repeat stations observations were taken at shorter intervals of 1 to 10 miles apart in some of the magnetically disturbed areas in India: these are shown in map No. 12, in groups hachured in red. The results of the observations in these areas are very irregular and most conflicting and do not point to any definite sources of attraction or reveal any features arising from regional effects. The nature of the abnormalities indicate that the disturbances are of purely local origin and are no doubt due entirely to unequally magnetized rocks hidden close below the ground surface, the repulsive forces in the rocks being as common as attractions. In some localities the disturbances may possibly be due to the presence of iron ore; there are, however, no means of ascertaining in which of the areas the disturbances are chiefly due to this cause. Where iron ore is known to exist, such for instance as the Tata iron fields in Central India, it is not possible to locate good or workable ore with the magnet. Ore of inferior quality and of no economic value seems to influence the magnet most: this will be understood from the following statement received in 1910 from Sir Thomas Holland, the Director of the Geological Survey of India:—

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"Only certain ores are magnetic, thus magnetite ($Fe_3 O_4$) is highly magnetic, whilst hematite ($Fe_2 O_3$) one of the commonest of iron ores is, as a rule, not magnetic, although at times feebly so. Thus a large expanse of hematite hidden under alluvium might perfectly well escape detection through observations based on magnetic qualities only, whilst, on the other hand, certain igneous rocks, which contain more or less magnetite as one of their primary constituents, although not in sufficient quantity to be of any economic value whatsoever might have considerably more effect on the magnet than an extensive and valuable mass of hematite". This is borne out by the fact that the compass needle is not affected in any of the localities producing rich iron ore but is much disturbed in places where the ore is of inferior quality and is practically unworkable.

In the British magnetic survey disturbances are defined as the difference between the observed and computed values of the magnetic elements, i. e. the difference between the true iso-magnetics and "Terrestrial lines" derived from formula of an arbitrary type, the constants of which are calculated in such a way as to fit as well as possible with the true iso-magnetics. It is obvious that by making the formula more and more complicated the shape of the iso-magnetics can be more and more closely approximated to, and hence the calculation of terrestrial lines in this manner for reckoning disturbances is of doubtful value and not applicable in the case of India where the results of the observations in each of the many disturbed areas are so irregular and contradictory.

It will be apparent from the preceding remarks that a detailed investigation of the results in the disturbed areas would be of no practical or scientific value to justify the considerable amount of labour that would be involved in the computations and hence the results of the observations in the detail areas are not included in this publication.

All that is required for practical purposes and for the study of the magnetic state of the country is to show the actual facts of nature as obtained from an accurate survey; this idea is borne out in the Magnetic Survey Committee's Report—in the appendix to this volume—in which a simple and practical method of reduction has been recommended and followed in the reduction of observations to epoch. All the essential facts are available from the published data and maps of the general survey; in these maps the true iso-magnetics are drawn as accurately as possible, without any attempt to smooth out the irregularities, and represent the actual magnetic conditions, the twists and turns in the iso-magnetics indicating a more or less disturbed state of the country and the isolated closed curves, the highly disturbed areas, the distorted forms enabling us to judge of the nature and magnitude of the disturbances.

REDUCTION OF OBSERVATIONS TO THE EPOCHS 1909-0 and 1920-0

A committee consisting of Dr. G. T. W. Walker, C.S.I., F.R.S., Director General of Observatories, as president, and Captain R.H. Thomas, R.E., and Dr. J. de Graaff Hunter, M.A. of the Survey of India, was appointed by the Government of India in March 1914 to consider the position of the magnetic survey and advise as to the measures to be taken to complete it. The conclusions arrived at are contained in a report of the committee in the appendix to this volume. The simple and practical method of reduction of the magnetic elements as advised by them has been followed in the reduction of observations to epoch. A modification has, however, been introduced in applying the corrections for diurnal inequality and disturbance. Instead of combining the two corrections each has been applied independently to the observations since it became apparent in the course of the computation that the error is appreciable if the diurnal inequality and disturbance corrections are not dealt with separately.

The reduction of observations includes the application of the corrections for instrumental differences, diurnal inequality, disturbance and annual change.

In the reduction of the field observations to the selected epochs the first essential is the elimination of instrumental errors by applying the necessary corrections to the field instruments to reduce the values obtained by them to the standard instrument at the Dehra Dūn observatory, the chief base station of the Magnetic Survey; for this purpose the absolute instruments used at the base stations were compared once a year by means of relative observations made with selected portable field instruments which are themselves compared with the standard at Dehra Dūn both before and after the annual inspections of the base stations. The field instruments are also compared regularly against the Dehra Dūn standard twice each year at the beginning and end of the field season. The series of comparative observations with the instruments were as far as possible simultaneous, site errors being eliminated by exchange of sites: the comparisons in the case of declination and

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horizontal force were also made through the magnetographs for the standardization of which additional observations were taken with the standard instrument during the comparisons.

The instrumental correction to the declination values of each instrument is an easy matter, being simply the application of the mean of the actual differences obtained between each against the standard through the magnetograph curves. The instrumental differences for declination are given in Table I below.

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TABLE I.

Comparison of field instruments Nos. 1_A 2_A 3_A 4_A 5_A 6_A and 10_A against magnetometer No. 17, the standard at Dehra Dūn; No. 16 at Kodaikānal; No. 19 at Toungoo, No. 20 at Barrackpore and No. 7 at Alibāg.

	Instrumental differences in DECLINATION.																							
	The Dehra Dun Standard No. 17 and field magnetometers.							Kodaikānal No. 16 and field magnetometers.				Toungoo No. 19 and field magnetometers.				Barrackpore No. 20 and field magnetometres.						Alibāg No. 7 and field magnetometers.		
	17 – 1A	17 – 2A	17 – 3A	17 – 4A	17 – 5A	17 – 6A	17 – 10A	16 – 1A	16 – 5A	16 – 6A	16 – 10A	19 – 1A	19 – 3A	19 – 6A	19 – 10A	20 – 1A	20 – 2A	20 – 4A	20 – 5A	20 – 6A	20 – 10A	7 – 2A	7 – 6A	7 – 10A
1902-03	+0·5	...	+0·1	−0·7	0·0	+0·1	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
	−0·3	...	+0·1	−0·7	...	+0·7	...	...	...	...	...	...	...	...	...	...	..	...	...	..	...	...	...	...
1903-04	0·0	...	−0·1	−1·0	−0·4	+0·3	−0·2	0·0	...	...	...	...	...	...	...	+1·5	...	...	...	...	...	...	...	...
	0·0	...	+0·2	−0·7	−0·3	+0·2	+0·3	...	...	...	...	...	...	...	...	+1·5	...	...	...	...	...	...	...	...
1904-05	+0·1	...	−0·1	−1·0	−0·3	−0·1	+0·2	+0·2	...	...	...	0·0	...	...	...	...	...	...	...	...	...	...	...	...
	+0·2	...	+0·3	+1·1	0·0	+0·1	...	...	...	...	...	...	...	...	...	+1 6	...	...	..	..	...	...	...	...
1905-06	...	+0·5	+0·2	−0·5	+0·1	+0·3	+0·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	...	+0·1	+0·1	+0·2	+0·1	+0·5	+0·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
1906-07	...	+0·6	+0·3	−0·4	+0·1	+0·7	+0·5	...	...	...	−0·6	−0·5	...	...	...	+1·3	...	...	...	...	+1·3	...	...	...
	...	+0·2	−0·1	−0·2	−0·4	+0·2	+0·5	...	...	...	...	...	...	...	..	..	...	...	...	...	+0·8	−0·4	...	...
1907-08	...	+0·2	0·0	−0·7	−0·5	+0·3	0·0	...	...	...	+0·1	...	...	...	0·0	...	+0·9	...	...	..	...	..	...	...
	...	0·0	−0·1	−0·6	−0·4	+0·1	+0·1	...	...	...	...	...	...	...	...	...	...	..	...	...	...	+0·1	...	...
1908-09	...	+0·8	...	+0·6	+1·0	+1·7	+0·7	...	...	...	−0·4	...	...	...	−0·2	...	+1·0	...	...	...	...	...	...	...
	...	+0·5	+0·5	+0·1	+0·3	+0·8	+0·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	−0·4	...	...
1909-10	...	+0·5	+0·4	+0·1	+0·1	+0·9	+0·3	+0·3	...	...	...	...	...	...	−0·6	...	...	...	...	...	+1·2	...	+1·2	...
	...	...	...	−0·9	−0·6	+0·1	−0·5	+0·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1910-11	...	...	+0·1	−0·4	−0·4	+0·4	+0·1	...	...	...	+0·6	...	...	...	−0·2	...	...	...	...	...	+0·3	...	...	...
	...	...	+0·3	−0·1	+0·3	+0·9	+0·5	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	+1·5
1911-12	...	...	...	...	+0·1	+0·9	+0·1	...	...	...	+0·5	...	...	...	+0·2	...	...	...	...	...	+0·9	...	...	..
	...	...	...	...	−0·1	+0·6	+0·6	...	...	...	0·0	...	...	...	−0·1	...	...	...	...	...	...	...	...	+1·5
1912-13	...	...	+0·7	...	+0·6	+1·3	+1·2	...	−0·2	...	...	...	...	...	−0·6	...	...	+0·7	...	+1·2	+1·1	...	+1·3	...
	...	...	+0·6	0·0	+0·2	+0·6	+0·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1913-14	...	...	+0·5	...	...	+0·8	+0·5	...	...	+0·5	...	...	...	...	−0·6	...	...	...	...	...	+1·1	...	+1·6	.
	...	...	+0·7	...	...	+0·8	+0·6	...	...	...	...	...	...	...	0·0	...	...	...	...	...	...	...	...	...
1914-15	...	...	+0·8	...	+0·8	+1·2	...	...	...	+0·6	...	...	−0 7	...	...	...	...	+0·7	+0·4	...	...	...	+1·3	...
	...	...	+0·7	...	+0·8	+1·2	...	...	...	+0·9	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1915-16	...	...	...	...	+0·3	+1·2	...	...	...	+0·9	...	...	...	...	...	...	...	...	...	...	...	...	+1·4	...
	...	...	...	...	+0·4	+1·3	...	...	...	+0·5	...	...	...	−0 1	...	...	...	...	...	...	...	...	...	...
1916-17	...	...	...	...	...	+0·4	...	...	...	...	...	...	...	−0·4	...	...	...	...	...	..	...	...	...	...
	...	...	...	...	...	+0·3	...	...	...	...	...	...	...	−0·9	...	...	...	...	...	...	...	..	...	...
1917-18	...	...	...	...	...	+0·2	...	...	...	...	...	...	...	−0·6	...	...	...	...	...	...	...	+0·9	...	...
	...	...	...	...	...	+0·2	...	...	...	...	...	...	...	−0·3	...	...	...	...	...	...	...	...	...	...
1918-19	...	...	...	...	...	−0·1	...	...	...	+0·5	...	...	...	−0·2	...	...	...	...	...	...	...	+1·7	...	...
	...	...	...	...	...	+0·1	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1919-20	...	...	+0·7	−0·9	−0·6	−0·1	...	...	0·0	...	...	...	...	...	...	...	...	..	...	...	...	+1·9	...	...
	...	...	+0·7	+0·7	+0·6	+0·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mean	+0·1	+0·4	+0·3	−0·3	+0·1	+0·5	+0·3	+0·2	−0·1	+0·7	0·0	−0·3	−0·7	−0·4	−0·2	+1·5	+1·0	+0·7	+0·4	+1·2	+1·0	−0·2	+1·4	+1·5

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horizontal force were also made through the magnetographs for the standardization of which additional observations were taken with the standard instrument during the comparisons.

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1902-03	+0·5	...	+0·1	−0·7	0·0	+0·1	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
	−0·3	...	+0·1	−0·7	...	+0·7	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
1903-04	0·0	...	−0·1	−1·0	−0·4	+0·3	−0·2	0·0	...	...	...	...	...	...	...	+1·5	...	...	...	..	...	...	...	...
	0·0	...	+0·2	−0·7	−0·3	+0·2	+0·3	...	...	...	...	...	...	...	...	+1·5	...	...	...	...	...	...	...	...
1904-05	+0·1	...	−0·1	−1·0	−0·3	−0·1	+0·2	+0·2	...	...	...	0·0	...	...	...	...	...	...	...	...	...	...	...	...
	+0·2	...	+0·3	+1·1	0·0	+0·1	...	...	...	...	...	...	...	...	...	+1 6	...	...	...	..	...	...	...	...
1905-06	...	+0·5	+0·2	−0·5	+0·1	+0·3	+0·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	...	+0·1	+0·1	+0·2	+0·1	+0·5	+0·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1906-07	...	+0·6	+0·3	−0·4	+0·1	+0·7	+0·5	...	...	...	−0·6	−0·5	...	...	...	+1·3	...	...	...	...	+1·3	...	...	...
	...	+0·2	−0·1	−0·2	−0·4	+0·2	+0·5	...	...	...	...	...	...	...	..	.	...	...	...	...	+0·8	−0·4	...	...
1907-08	...	+0·2	0·0	−0·7	−0·5	+0·3	0·0	...	...	...	+0·1	...	...	...	0·0	...	+0·9	...	...	...	...	..	...	...
	...	0·0	−0·1	−0·6	−0·4	+0·1	+0·1	...	...	...	...	...	...	...	...	...	...	..	...	...	...	+0·1	...	...
1908-09	...	+0·8	...	+0·6	+1·0	+1·7	+0·7	...	...	...	−0·4	...	...	...	−0·2	...	+1·0	...	...	...	...	...	...	...
	...	+0·5	+0·5	+0·1	+0·3	+0·8	+0·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	−0·4	...	...
1909-10	...	+0·5	+0·4	+0·1	+0·1	+0·9	+0·3	+0·3	...	...	...	...	...	...	−0·6	...	...	...	...	...	+1·2	...	+1·2	...
	...	...	...	−0·9	−0·6	+0·1	−0·5	+0·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1910-11	...	...	+0·1	−0·4	−0·4	+0·4	+0·1	...	...	...	+0·6	...	...	...	−0·2	...	...	...	...	...	+0·3	...	...	...
	...	...	+0·3	−0·1	+0·3	+0·9	+0·5	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	+1·5
1911-12	...	...	...	...	+0·1	+0·9	+0·1	...	...	...	+0·5	...	...	...	+0·2	...	...	...	...	...	+0·9	...	...	..
	...	...	...	...	−0·1	+0·6	+0·6	...	...	...	0·0	...	...	...	−0·1	...	...	...	...	...	...	...	...	+1·5
1912-13	...	...	+0·7	...	+0·6	+1·3	+1·2	...	−0·2	...	...	...	...	...	−0·6	...	...	+0·7	...	+1·2	+1·1	...	+1·3	...
	...	...	+0·6	0·0	+0·2	+0·6	+0·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1913-14	...	...	+0·5	...	...	+0·8	+0·5	...	...	+0·5	...	...	...	...	−0·6	...	...	...	...	...	+1·1	...	+1·6	.
	...	...	+0·7	...	...	+0·8	+0·6	...	...	...	...	...	...	...	0·0	...	...	...	...	...	...	...	...	...
1914-15	...	...	+0·8	...	+0·8	+1·2	...	...	...	+0·6	...	...	−0 7	...	...	...	...	+0·7	+0·4	...	...	...	+1·3	...
	...	...	+0·7	...	+0·8	+1·2	...	...	...	+0·9	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1915-16	...	...	...	...	+0·3	+1·2	...	...	...	+0·9	...	...	...	...	...	...	...	...	...	...	...	...	+1·4	...
	...	...	...	...	+0·4	+1·3	...	...	...	+0·5	...	...	...	−0 1	...	...	...	...	...	...	...	...	...	...
1916-17	...	...	...	...	...	+0·4	...	...	...	...	...	...	...	−0·4	...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	+0·3	...	...	...	...	...	...	...	−0·9	...	...	...	.	...	...	...	...	..	...
1917-18	...	...	...	...	...	+0·2	...	...	...	...	...	...	...	−0·6	...	...	...	...	...	...	...	...	+0·9	...
	...	...	...	...	...	+0·2	...	...	...	...	...	...	...	−0·3	...	...	...	...	...	...	...	...	...	...
1918-19	...	...	...	...	...	−0·1	...	...	...	+0·5	...	...	...	−0·2	...	...	...	...	...	...	...	...	+1·7	...
	...	...	...	...	...	+0·1	...	...	..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1919-20	...	...	+0·7	−0·9	−0·6	−0·1	...	...	0·0	...	...	...	...	...	...	...	...	...	...	...	...	...	+1·9	...
	...	...	+0·7	+0·7	+0·6	+0·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mean	+0·1	+0·4	+0·3	−0·3	+0·1	+0·5	+0·3	+0·2	−0·1	+0·7	0·0	−0·3	−0·7	−0·4	−0·2	+1·5	+1·0	+0·7	+0·4	+1·2	+1·0	−0·2	+1·4	+1·5

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The instrumental differences in declination between the standard magnetometer No. 17 at the Dehra Dūn observatory and those at the other observatories, deduced from the table above are :—

No. 17 − No. 16 = +0′·1
„ 17 − „ 19 = +0′·6
„ 17 − „ 20 = −0′·8
„ 17 − „ 7 = −1′·0

No instrumental corrections have been applied to the observations with the dip circles as the differences obtained by direct simultaneous comparisons with the standard were not consistent throughout; the error introduced, however, by neglecting to apply the instrumental corrections will seldom be more than the error of observation.

The behaviour of the dip needles have not been at all satisfactory, even under observatory conditions their indications have been erratic and the values of the dip in the intercomparisons cannot be relied upon to nearer than two minutes of arc. No two needles agree with one another and though at times there may appear to be a fairly uniform difference between them the values are often very inconsistent. The main cause of these discrepancies appear to be undoubtedly due to defects in the axles of the needles, different parts of which are brought into play as the dip changes in different magnetic latitudes.

The instrumental differences in horizontal force (H) varied considerably from time to time and it was necessary to investigate the cause of the apparent variations before it was possible to determine the actual difference of each instrument from the standard. A discussion on the subject of instrumental differences in horizontal force will be found in the Narrative Reports for 1908-09 and the Records of the Survey of India, Volumes I, II and III for 1909-1910, 1910-11 and 1911-12 respectively.

The final adjustment of the distribution factors P and Q, the moment of inertia and the magnetic moment, all of which contribute appreciably to the observed values of the horizontal force are referred to below :—

Since the second distribution coefficient, or Q term, in the expression $\left(1+\frac{P}{\gamma^2}+\frac{Q}{\gamma^4}\text{ etc.}\right)^{-1}$, is not negligible with the India Survey magnets both the P and Q terms as computed by the formula referred to on page 17 have been used in the final reduction of the horizontal force instead of the approximate expression $1-\frac{P}{\gamma^2}$.

Before 1906 there was some uncertainty in the moment of inertia of the field magnets owing to an unexplained change in the length of the inertia bar No. 2 which was previously in use as the standard : the moment of inertia of the standard magnet was, however, determined also with inertia bar No. 17 and the changes were known from time to time with considerable accuracy.

In 1905 an inertia bar of gilt rolled brass was presented by Dr. Watson, F.R.S.; the absolute moment of this bar as well as of bar No. 2 and 17 were determined with Dr. Watson's moment of inertia apparatus which was placed at the disposal of Major Fraser, R.E., while this officer was on deputation in Europe.

In order to obtain the correct values of the moment of inertia of the Survey magnets full determinations were carried out in 1906 with bars No. 2 and 17, and also with the gilt bar which was adopted as the standard and has been used continuously since that date for determining the moment of inertia of all the survey magnets.

Regular weighments of the Survey Gilt (S. G.) bar since 1906 show a decrease of weight at the average rate of ·002 gramme a year. The weight of the bar was also determined at the National Physical Observatory in November 1922 and agrees with that subsequently determined at Dehra Dūn. The loss of weight is undoubtedly due to friction in inserting and removing the bar from the sheath of the collimator magnet several times during a moment of inertia experiment.

If the correction for the loss of weight in the S. G. bar is applied to the original value of the moment of inertia (K) as determined by Professor Watson by comparison with his bar No. 10 in 1906, the value of $\log \pi^2 K$ of the S. G. bar at 0° cent = 3·75292.

Dr. Chree, Superintendent of the Kew Observatory, very kindly offered to redetermine the $\pi^2 K$ value of the S.G. bar which was sent to him recently. His value by comparison against Professor Watson's bar No. 10 at 0° cent. = 3·75301, using a different coefficient of expansion to Prof. Watson's: if the original coefficient of expansion is used the value will be 3·75298, which is in closer agreement with our determination as given above.

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Dr. Chree's value of π^2K of the S. G. bar, by comparison against the two standard bars at Kew, at 0° cent = 8·75309, which is an increase of ·00011 on our determination. His value for the Kew standard bars against Dr. Watson's bar No. 10 gives an increase also, of ·00013, so that Prof. Watson's value of π^2K of the S. G. bar is in error by about this amount.

Dr. Chree states that the difficulty with Dr. Watson's bar No. 10 is that it has rounded edges and is gilt and consequently its moment of inertia cannot be calculated from its dimensions; he, however, hopes eventually to redetermine the moment of inertia of Dr. Watson's bar No. 10 in terms of the mean moment from such of the other Watson's bars at the National Physical Laboratory, using the late measurements of the latter taken at this laboratory. Until this is done it is not possible to say what error, if any, exists between the Kew and Dehra Dūn standard bars. The error, however, which may be introduced in our determination of the horizontal force, owing to an erroneous value of π^2K, will be a constant quantity included in the instrumental difference of the Kew and Dehra Dūn standard magnetometers.

With the finally accepted values of the moment of inertia and distribution coefficients the base lines of the magnetographs at the observatories and the values of H as obtained with the different field magnetometers were computed: also by introducing the following modification satisfactory values of the instrumental differences were finally determined and applied in the reduction of the observations to the standard:—

In the method adopted of computing H in the final reduction mH and $\frac{m}{H}$ of the vibration and deflection observations are combined to obtain values of m only. The values show appreciable fluctuations from the mean value due to errors of observation and changes in H during the period of observation: it is the practice to repeat observations where the value of m differs more than ·05 per cent. from the previous mean value, (ordinarily the value of m falls slowly with lapse of time, it is also liable to sudden falls which are probably due to accidental rough handling), the values of m obtained as above are divided into groups and a scrutiny of these enables a mean value of m applicable to any given period to be readily ascertained; the mean value is then applied to the finally corrected value of $\frac{m}{H}$ at the 22·5 cms. distance and the value of H obtained.

Formerly the practice was to obtain H by combining the mH and $\frac{m}{H}$ of the vibration and deflection observations but the probable error of a vibration observation is considerably larger than that of a deflection observation and it is therefore preferable to use the deflection observation in computing H, the value of m, however, must be known and as this is ordinarily fairly constant a sufficiently accurate value can be obtained by combining a large number of vibrations and deflections, the vibrations whenever possible being observed with the chronograph. The method of computation was in the first instance applied to the base station observations, where the base line observations offered a ready means of testing any resulting improvement over the former method. In practically every case the probable error of the mean base line was considerably diminished and the base line values improved.

Personal error is a factor that was also allowed for in the instrumental differences where the errors of observation were apparent from the vibration experiment by the eye and ear method and that by the electric chronograph, vide the Records of the Survey of India, Volume II, page 94.

The finally adjusted values of the distribution factor $\left(1 + \frac{P}{t^2} + \frac{Q}{t^4} \cdot\cdot\right)^{-1}$, the magnetic moment (m) and base lines (B.L.) of the horizontal force for all the observatory and field magnetometers are given in the following tables Nos. II to VII.

The instrumental differences in horizontal force between the Dehra Dūn standard magnetometer No. 17 and the other observatory and field magnetometers, using the finally adjusted constants in tables II to VII for the computations, are given in tables VIII and IX.

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TABLE II.

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the Base Line values of magnetometer No. 17, the Survey standard at the Dehra Dūn observatory.

Temperature of reduction 25°C.

Months	1902				1903				1904				1905			
	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January				In 1902, the absolute observations were taken with Magnetometer No. 5 in the old South House. These observations were not satisfactory up to September. From March to September the Base Line values are derived from comparative observations and chronograph vibrations with various magnets and by interpolations the values in 1902 have been reduced to the standard No. 17 in the present South House. From January 1903, the observations are taken with the Standard Magnetometer No. 17 in the present South House.	2·96186* 173†	I·99315	·33232	*to 14th †from 17th	2·96115	I·99315	·33201		2·96103	I·99315	·33168	
February					173	,,	228		115		*199*		103		165	
March			·33276		157	,,	225		115		197		103		163	
April			275		157* 144†	,,	224	*to 11th †from 15th	114		200		103		166	
May			273		144	,,	224		114		200		096		166	
June			*267*		144	,,	223		114		195		096		162	
July			*262*		144	,,	220		114		191		096		161	
August			*257*		144	,,	...		114		185		096		154	
September			*252*		143	,,	190 199	from 12th to 22nd from 23rd	113		184 169	to 24th from 28th	096		187	
October	2·97384	I·99369	247		143* 115†	,,	199	*to 17th †from 21st	113		*168*		095		187	
November	384	,,	241		115	,,	202		113		166		095		189	
December	2·96756	I·99311	236		115	,,	203		113* 103†		167	*to 17th †from 21st	095		189	

N. B. The values in italics are obtained by interpolation.

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TABLE II—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 17, the Survey standard at the Dehra Dūn observatory.

Temperature of reduction { 25°c to December 1907 / 27°c from January 1908.

Months	1906				1907				1908				1909			
	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L	Remarks	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L	Remarks	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·96095	1·99315	·33139		2·96063	1·99315	·33107		2·95979	1·99346	·33028		2·95103	1·99346	·33009	
February	095		137		062		106		979		30		103		009	
March	095		138		062		109		979		31		103		011	
							109	to 10 a.m. on 8th								
April	094		140		062		175	from 10·30 a m. on 8th	979		33		102		012	
May	094		140		062		175		2·95118		33		102		011	
							175	to 10 a.m. on 8th								
June	094		136		062		027	from 10.30 a.m. on 8th	118		32		102		011	
							024	to 16th								
July	094		132		061		020	from 17th	118		26		102		008	
							018	to 3rd								
August	094		127		061		010	from 7th	118		22		102		007	
	094*			*to 25th											071	to 16th
September	063†		122	†from 27th	062		009		118		18		101		060	from 17th
															053	to 18th
							009	to 18th							046	from 14th to 10h on 30th
October	063		118		2·95980	1·99360	006	from 19th	118		11		101		076	from 10h 30m on 30th
															076	to 14th
			117	to 17th					118*			*to 6th			069	from 15th to 10h on 21st
November	063		112	from 21st	979		005		103†		10	†from 11th	101		·32997	from 10h 30m on 21st
December	063		108		979		004		103		08		037		997	

Note—The change in the temperature of reduction from 25° to 27° gives a difference of +25$_7$ in the Base Lines.

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TABLE II—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\cdots\right)^{-1}$, the magnetic moment (m) and the base line values magnetometer No. 17, the Survey standard at the Dehra Dūn observatory.

Temperature of reduction 27°C.

Months	1910				1911				1912				1913			
	log m	log $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·95037	Ī·99346	·32997		2·95034	Ī·99346	·32974		2·95024	Ī·99346	·32980		2·95015	Ī·99331	·32891	
February	036		996		034		981		024		982		015		888	
March	036		996	to 10h on 7th												
			·33141	from 10-30 on 7th												
			064	to 10h on 12th												
				from 10-30 on 12th	034		988		024		983		015		885	
April	036		066		034		995		023		984		015		886	
May	036		066		025		994		023		984		2·90917	Ī·99419	885	
			065	to 14th							866	from 10th to 14th				
			133	from 18th to 22nd							856	18th to 25th			883	to 21st
June	036		·32990	from 23rd	025		992		023		844	27th to 30th	917		877	from 24th
											835	4th to 6th				
											823	10th to 20th			873	to 15th
July	035		989		025		989		023		808	27th to 30th	869		868	from 17th
											802	3rd to 10th				
							986	to 15th			794	15th to 20th			863	to 12th
August	035		987		025		978	from 18th	023		786	21st to 31st	869		855	from 14th
											779	to 10h on 10th				
September	035		981		025		977		022		825	from 10.30 on 10th	859		851	
											822	1st to 2nd				
											807	3rd to 24th			851	to 16th
October	035		975		025		973		022		908	25th to 31st	859		840	from 18th
											905	to 26th				
November	035		972		024		974		022		895	from 28th	858		836	
									022*		895	*to 19th				
December	034		971		024		976		015†	Ī·99331	894	† from 20th	858		834	

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TABLE II—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 17, the Survey standard at the Dehra Dūn observatory.

Temperature of reduction 27°C.

Months	1914				1915				1916				1917			
	log m	log $\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·90858* 817†	I·99419	·32834	* to 22nd † from 24th	2·90815	I·99419	·32802		2·90762	I·99419	·32800		2·90678	I·99409	*·32774*	
February	817		832		815		802		762		800		678		774	
March	817		833		814		802		762		800		678		775	
April	817		833		814		799		710	I·99462	801		678		776	
May	816		832		814		802		710		801		678		775 752	to 10h. on 30th May from 11 on 30th May
June	816		832		814		801		710		801		678		753	
July	816		830		814		811 822	to 10 h. on 7th from 11h. on 7th	710		801		677		748	
August	816		830 824	to 8th from 11th	814		818		710		799 794	to 28th from 29th	677		741	
September	816		824 819	to 15th from 17th	813		818 812	to 15th from 16th	709		793		677		735 730	to 18th from 19th
October	815		819 813	to 17th from 20th	813		806		709		788 780	to 20th from 21st	677		726	
November	815		809		813		803		709		776		677		723	
December	815		806 800	to 13th from 14th	813* 762†		799	* to 3rd † from 9th	709		774		677		723	

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TABLE II.—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 17, the survey standard at the Dehra Dūn observatory.

Temperature of reduction 27°C.

Months	1918				1919				1920							
	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·90676	1·99409	·32720 714	to 15th from 17th	2·90674	1·99409	·32707		2·90668	1·99431	·32695					
February	676		715		674		707		667		694					
March	676		716		674		708		667* 655†		694	* to 16th † from 18th				
April	676		714		674		707		655		694					
May	676		714 721	to 18th from 21st	674		707		655		694					
June	675		721		668		707									
July	675		720		668		707									
August	675		720		668		706									
September	675		717		668		703									
October	675		715		668	1·99409* 1·99431†	701	* to 16th † from 17th								
November	675		711		668		702									
December	674		706		668		697									

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TABLE III.

The distribution factor $\left(1+\frac{p}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and base line values of Magnetometer No. 19, at the Toungoo observatory.

Temperature of reduction { 87° Farh. up to December 1906.
89° Farh. from January 1907.

Months	1905				1906				1907				1908			
	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
							·38318	to 11h on 3rd								
							295	12h on 3rd to 13th								
							287	16th to 22nd			·38187	to 10h 53m on 29th				
January					2·94772	I·99309	*283*	from 23rd	2·94717	I·99309	·38432	fr. 11h 9m on 29th	2·97706	1·99352	·38341	
							278	to 24th								
February					768		273	25th to 6th Mar.	712		432		706		341	
March					763		268	from 7th	708		432		706		341	
							263	to 11th						MAGNET 19 A		
							259	12th to 14th					2·95656			
April					759		254	from 15th	703		426		645	1·99286	·38359	
May					754		255	...	699		425		642		356	
							239	to 15th								
June					749		235	from 16th	694		416		625	1·99195	351	
																* to 11th
																† from 15th
															349	to 12th
													617*		344	13th to 14th
July					744		222		690		405		581†		339	from 15th
													569*			* to 22nd
August					740		222		687		402		556†		336	† from 26th
										MAGNET 5B			549*			* to 13th
September					735		225		2·97901	I·99352	·38354		517†		327	† from 17th
							227	to 11h 5m on 8th								
October		MAGNET 19			731		193	fr. 11h 26m on 8th	901		354		511*		324	* to 12th
November					726		189		901		349		386*		319	* from 14th
			·38328	to 4th												* to 12th Dec.
			337	7th to 9th												† from 16th Dec.
			329	11th to 12th												
December	2·94775	I·99309	318	16th to 30th	722		182		706		345		379*		315	to 10h on 15th
													374†		535	fr. 10h 30m on 15th

Note—The change in the temperature of reduction from 87° to 89° gives a difference of + 15γ in the base lines.

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TABLE III—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 19, at the Toungoo observatory.

Temperature of reduction 89° F.

Months	1909				1910				1911				1912			
	Log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·95366	I·99195	·38533		2·95211*			* to 15th								
					196†	I·99195	·38508	† from 19th	2·95016	I·99195	·38535		2·94691	I·99195	·38500	
February	358		530		188		505		008		536		682		499	
								* to 17th								
								† from 19th								
	350				181*		503	to 11h 5m on 19th								
March	328		526		177†		537	fr. 11h 36m on 19th	2·94999		532		674		499	
								* to 23rd								
								† from 26th								
					162*		534	to 12th								
April	318		523		158†		549	from 14th	991		530		665		498	
					151*			* to 5th								
	311*			* to 19th	141†			† 7th to 20th								
May	296†		521	† from 22nd to June 12th	137‡		550	‡ from 21st	983		528		656		500	
June	290		518		131		548		974		523		648		497	
	283															
July	272		516		122		547		966		521		639		490	
August	265		514		114		546		957		520		631		485	
September	256		514		106		542		949		515		622		481	
					098*			* to 22nd			514	to 27th				
October	247		514		070†		542	† from 25th	940		501	from 28th	614		476	
	240				066*			* to 19th								
November	225		512		046†		537	† from 22nd	932		502		583		471	
					041*			* to 17th	926*			* to 9th				
December	218		510		023†		534	† from 20th	698†		503	† from 19th	575		467	

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TABLE III—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 19, at the Toungoo observatory.

Temperature of reduction 89° F.

Months	1913				1914				1915				1916			
	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·94566	Ī·99195	·38466		2·94357	Ī·99229	·38646		2·94299	Ī·99229	·38614		2·94243	Ī·99229	·38606	
February	547		466		352		642		294		610		239		605	
March	540* 525†		463	* to 22nd † from 26th	348		642		289		612		234		605	
April	520		460		343		640		284		613 624	to 24th from 25th	229		606	
May	511		460		338		640		279		620		224		609	
June	503		458		333		637		275		617		219		607	
July	494		455		328		631		270		613		214		604	
August	486		450		324		628		266		612		209		604	
September	481* 468†		448	* to 9th † from 11th	319		623		261		610		204		601	
October	460		446		314		622		256		607		199		596	
November	454* 365†	Ī·99229†	443	* to 12th † from 17th	309		619		252		605		194		594	
December	362		440 650	to 9h. on 25th from 10h. on 25th	304		616		248		606		189		600	

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TABLE III—(*Concluded*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of magnetometer No. 19, at the Toungoo observatory.

Temperature of reduction 89°F.

Months	1917				1918				1919				1920			
	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·94184	1·99229	·38605		2·94124	1·99229	·38587		2·93779	1·99205	·38695		2·93705	1·99205	·38667	
February	179		601		119		586	* to 11th † from 12th	774		693		700		667	
March	174		599		117* 102†		583‡ 716§	‡ to 10h on 29th § from 12h on 29th	769		691		695		667	
April	169		601		099		716		750		685		690		666	
May	164		602		094		708		745		683		685		664	
June	159		602		090		700		740		681					
July	154		598		085		695		735		677					
August	149		595		080		692		730		673					
September	144		592		075		690		725		668					
October	139		590		070		693		720		666					
November	134		588		065		688		715		663					
December	129		586		063* 2·93782†	1·99205†	692	* to 19th † from 21st	710		666					

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TABLE IV.

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 16, at the Kodaikānal observatory.

Temperature of reduction 19°C.

Months	1902				1903				1904				1905			
	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
							·037063	to 10h. on 16th								
							012	from 11h. on 16th to 10h. on 17th								
January					2·96592	Ī·99285	078	from 11h. on 17th	2·96580	Ī·99285	·37037		2·96578	Ī·92285	·37021	
February					592		075		580		037		578		018	
													577*			*to 11th
March					592		075		580		033		565†		017	†from 15th
											032	to 27th				
April					592		074		580		040	from 28th	565		015	
							070	to 12th								
May					592		055	from 13th	579		040		565		015	
													565*			*to 14th
June					591		055		579		040		538†		014	†from 15th
July					591		053		579		038		538		011	
August	2·96725	Ī·99285	·37093		591		055		579		040		529		007	
September	593		087		591		049		579		033		529		008	
											033	to 28th				
October	593		079		591		049		578		025	from 29th	529		006	
			075	to 22nd												
November	593		064	from 26th	580		045		578		025		528		005	
December	592		063		580		039		578		023		528		005	

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TABLE IV—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the Base Line values of magnetometer No. 16, at the Kodaikānal observatory.

Temperature of reduction 19°C.

Months	1906				1907				1908				1909			
	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·96528	$\bar{1}$·99285	·37007		2·96526	$\bar{1}$·99285	·36992		2·96437	$\bar{1}$·99285	·36978		2·96434	$\bar{1}$·99285	·36963	
February	528		008		499		989		437		977		434		960	
March	528		009		439		987		436		972		434		961	
April	528		004		438		988		436		970		434* 426†	$\bar{1}$·99259†	961	* to 3rd † from 5th
May	527		004		438		987		436		971		304* 278†		959	* to 7th † from 8th
June	527		000		438		985		436		972		265		958	
July	527		·36997		438		983		436		970		176		955	
August	527		995		438		979		435		971		176		957	
September	527		992		437		977		435		968		176		958	
October	526		990		437		977		435		968		176		956	
November	526		990		437		977		435		966		175		955	
December	526		992		437		978		435		965		175		953	

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TABLE IV—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 16, at the Kodaikānal observatory.

Temperature of reduction 19°C.

Months	1910				1911				1912				1913			
	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·96175	I·99259	·36950		2·96173	I·99259	·36943		2·96171	I·99259	·36925		2·94664	I·99302	·37200	
February	175		946		173		944		171		920 ·37188	to 8h. on 28th from 9h. on 29th	664		203	
March	175		945		173		946				*190*		651		199	
April	175		945		172		944				*192*		651		203	
May	174		947		172		945				*194*		651		202	
June	174		947		172		942				*196*		651		202	
July	174		942		172		942				*198*		651		198	
August	174		941		172		938				*200*		650		196	
September	174		940		171		932		2·94664	I·99302	202		636		193	
October	173		940		171		934		664		201		636		192	
November	173		944		171		932		664		201		636		187	
December	173		944		171		930		664		198		636		184	

N.B.—The values in italics are obtained by interpolation.

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TABLE IV.—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 16, at the Kodaikānal observatory.

Temperature of reduction 19°C.

Months	1914				1915				1916				1917			
	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·94636	I·99302	·37187		2·94631	I·99334	·37379		2·94629	I·99334	·37368		2·94613	I·99302	·37366	
February	636		189		631		382		629		368		613		367	
March	635		188		631		381		629		370		612		366	
April	635		190 376	to 10h. on 16th from 11h. on 16th	630		382		628		371		612		365	
May	635		374		630		383		628		372		612		367	
June	635		376		630		383		628		372		612		363	
July	635		375		630		381		628		369		612		360	
August	635		376		630		382		628		369		612		362	
September	635	I·99334*	375	* from 26th	630		380		613	I·99302	371		611		360	
October	635* 631†		374	* to 2nd † from 3rd	629		380		613		371		611		360	
November	631		375		629		377		613		371		611		359	
December	631		379		629		373		613		367		611		357	

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TABLE IV—(*Concluded*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 16, at the Kodaikānal observatory.

Temperature of reduction 19°C.

Months	1918				1919				1920							
	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·94611	1·99302	·37357		2·94536	1·99302	·37363		2·94534	1·99302	·37346					
February	611		354		536		364		533		346					
March	610		360		535		362		533		344					
April	610		364		535		362		533		347					
May	610		365		535		364		533		348					
June	610		364		535		363									
July	610		360		535		360									
August	609		360		534		358									
September	609		360		534		356									
October	609		361		534		354									
November	609		361		534		352									
December	609* 536†		361	* to 14th † from 16th	534		351									

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TABLE V.

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 20, at the Barrackpore observatory.

Temperature of reduction 31° C.

Months	1903				1904				1905				1906			
	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January					2·97851	I·99334	·36953		2·97849	I·99334	·36873 869	to 14th from 15th	2·97846	I·99334	·36853	
February					851		947		849		863		846		858	
March					851		950		849		864 *870* *875* 880	to 11th 12th to 14th 15th to 18th from 19th	846		875 *880* 884	to 10th 11th to 13th from 14th
April					851		943		849		882		846		886	
May					851		933		849		877		846		890	
June					850		932 922	to 21st from 22nd	848		875		846		889	
July					850		914		848		874		845		*888*	
August	2·97852	I·99334	·37036 022	to 19th from 22nd	850		910		848		881		845		888	
September	852		·37011 *·37004* ·36997	to 5th from 6th to 8th from 9th	850		904		848		893		845		888	
October	852		·36990 *985* 979	to 10th from 11th to 13th from 14th	850		902		848		889		845		887	
November	852		975		850		899 893 890 *885* *880* 875	to 27th from 28th to 24th from 25th to 26th to 27th from 28th	848		888 *885* 882 874 *869* 863	to 18th 19th to 21st from 22nd to 16th 17th to 19th from 20th	656	I·99309	878 852 ·37048	 to 8h 33m on 13th fr. 10h 12m on 13th
December	851		970 963	to 5th from 6th	849				847				656			

N.B.—The values in italics are obtained by interpolation.

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TABLE V—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 20, at the Barrackpore observatory.

Temperature of reduction 31°C.

Months	1907				1908				1909				1910			
	log m	log $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L	Remarks	log m	log $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L	Remarks	log m	log $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	log $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·97656	I·99313	·37049		2·97654	I·99313	·37012	to 15th	2·97636*	I·99313*		* to 20th				
							009	16th and 17th					2·97273	I·99339	·37081	
							006	from 18th	275†	I·99339†	·37092	† from 21st				
February	656		046		654		008		275		094		273		080	
							008	to 21st								
							015	22nd to 24th								
March	656		048		653		021	from 25th	275		097		273		081	
April	655		054		653		028		275		104		273		091	
May	655		061		653		031		275		110		273		095	
June	655		062		638		032		275		112		272		102	
July	655		062		637		034		274		116		272		101	
August	655		066		637		033		274		115		272		111	
			068	to 11th												
			065	12th and 13th												
September	654		062		637		035		274		118		272		113	
							034	to 14th Oct.			115	to 9th				
							031	15th and 16th			*112*	10th to 12th				
October	654		054		637		027	from 17th	274		108	from 13th	272		109	
			050	to 5th							105	to 6th				
			044	6th to 10th			024	to 4th Nov.			*101*	7th to 9th			102	to 10th
			038	11th to 21st			021	5th and 6th			097	10th to 21st			099	11th to 20th
November	654		029	22nd to 30th	637		018	from 7th to 11h 34m on 4th	274		093	22nd to 30th	272		093	from 21st
			023	to 14th			018	fr. 12h. on 4th to 10h 5m on 7th								
			019	15th to 17th			046								088	to 8th
December	654		014	from 18th	637		089	fr. 10h 35m on 7th	274		084		271		081	from 9th

N.B.—The values in italics are obtained by interpolation.

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TABLE V—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of magnetometer No. 20, at the Barrackpore observatory.

Temperature of reduction 31°C.

Months	1911				1912				1913				1914			
	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·97271	1·99339	·37079		2·97269	1·99339	·37090	B.L. is obtained from observation with magnetr. 10	2·97267	1·99339	·37099	B.L, is obtained from observation with magnetr. 10	2·97136	1·99353	·37107	
February	271		078		269		088		267		*100*	B.L. is obtained from observation with magnetr. 6	136		113	
March	271		083		269		096		266		101		136		115	
April	271		*088*		269		107		266		*103*		136		117	
May	271		*094*		268		116		266		*104*		135		127	
June	270		097	B.L. is obtained from observation with magnetr. 10	268		117		266		*104*		135		136	
July	270		*097*		268		130		266		*107*		135		131	
August	270		*096*		268		123		265		*109*		135		132	
September	270		*095*		268		129		265		*108*		134		135	
October	270		*094*		267		126		137		*109*		134		135	
November	269		092	B.L. is obtained from observation with magnetr. 10	267		117		136		110		134		133	
December	269		*091*		267		112		136		110		134		127 120	to 26th from 27th

N. B. The values in italics are obtained by interpolation.

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TABLE V—(*Concluded*)

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 20, at the Barrackpore observatory.

Temperature of reduction 31°C.

Months	1915															
	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·97134	1·99353	·37116													
February	133		116													
March	133		116													
			119	to 6th												
April	133		127	from 7th												
May																
June																
July																
August																
September																
October																
November																
December																

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TABLE VI.

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of magnetometer No. 23, at the Colaba observatory.

Temperature of reduction 90°F.

Months	1902				1903				1904				1905			
	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January	I·79928	·00445	·37237		I·79893	·00445	·37312		I·79805	·00445	*·37059*		I·79805	·00445	·37118	
February	,,		248		890		311		,,		*062*		,,		128	
March	,,		242		881		314		,,		064		,,		135	
April	893		250		881* 866†		318	* to 2nd † from 9th	,,		064		800		131	
May	,,		260		866		324		,,		*070*		778* 771†		*138*	* to 24th † from 31st
June	,,		262		847		*325*		,,		076		771		144	
July	,,		277		,,		326		,,		077		,,		139	
August	,,		287		,,		332		,,		086		,,		149	
September	,,		287		,,		332		,,		*090*		,,		156	
October	,,		295		,,		332		,,		093		,,		*160*	
November	,,		293		,,		...		,,		096		,,		*164*	
December	,,		304		,,		·37056		,,		107		,,		*168*	

N.B.—m and $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$ at Colaba are in British units; base lines are in c.g.s units.

The values in italics are obtained by interpolation.

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TABLE VI—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 7, at the Alibāg observatory.

Temperature of reduction 85°F.

Months	1906				1907				1908				1909			
	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
			36411	3rd			·36505	2nd			·36473	1st				
			418	10th			510	9th			476	8th			·36460	6th
			426	17th			514	17th			480	15th			460	13th
			432	24th			520	24th			484	22nd			461	20th
January	2·97304	I·99304	438	31st	2·97299	I·99304	524	30th	2·97284	I·99304	486	29th	2·97284	I·99304	463	27th
			·36442	7th			·36530	6th			36488	5th			·36466	3rd
			448	14th			535	13th			491	12th			469	10th
			452	21st			540	20th			494	19th			474	17th
February	,,	,,	457	28th	,,		545	27th	,,	,,	497	26th			480	24th
			·36462	7th			·36550	6th			·36502	5th			·36484	3rd
	304*		466	14th *to 16th			554	13th			507	11th			489	10th
			472	21st			557	20th			509	18th			494	17th
March	300†	,,	478	28th †from 21st	,,		562	27th	,,	,,	515	25th			497	24th
			·36486	5th			·36564	3rd			·36519	1st			·36499	1st
			494	12th			569	10th			521	8th			503	7th
			502	18th			573	17th			524	15th			505	14th
			510	25th			579	25th			530	22nd			508	21st
April	,,	,,	·36519	2nd	292		·36585	1st	,,	,,	534	29th			510	28th
			528	9th			593	8th			·36541	6th			·36513	5th
			538	16th			598	15th			544	13th			516	12th
			549	23rd			606	22nd			551	20th			520	19th
May	,,	,,	560	30th	,,		613	29th	,,	,,	557	28th			521	26th
															·36525	2nd
			·36570	6th			·36617	5th			·36559	3rd			528	9th
			578	13th			624	12th			560	10th			530	16th
			585	20th			631	19th			567	17th			532	23rd
June	,,	,,	595	27th	,,		637	26th	,,	,,	570	24th			534	30th

N.B.—The values of the base-lines are obtained from the means of consecutive 5-weekly observations owing to the base lines changing rapidly; the mean date is given in column of remarks; the values of the base lines for any other date is obtained by interpolation.

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TABLE VI.—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 7, at the Alibāg observatory.

Temperature of reduction 85°F.

Months	1906				1907				1908				1909			
	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
			·36601	4th			·36642	3rd			·36573	1st				
			607	11th			649	10th			576	8th				
			615	18th			653	17th			579	15th				
July	2·97300	I·99304	624	25th	2·97292		657	24th			577	22nd				
			·36631	2nd			661	31st	2·97284	I·99304	580	29th	2·97284	I·99304	·36534	
			638	8th			·36664	7th			·36583	5th			·36537	4th
			642	15th			666	14th			586	12th			538	11th
			649	22nd			671	21st			589	19th			541	18th
August	,,	,,	656	29th	,,		674	28th	,,	,,	592	26th			544	25th
			·36662	5th			·36455	4th Change of			·36596	2nd			·36546	1st
			668	12th			459	11th B.L. on 1st			599	9th			549	8th
			677	19th			463	18th Sept.			604	16th			552	15th
September	,,	,,	684	26th	,,		466	25th			608	23rd			555	22nd
			·36691	3rd Change of			·36470	2nd Change of	,,	,,	613	30th			559	29th
			385	10th B.L. on 5th			473	9th B.L. on 21st			·36617	7th			·36563	6th
			394	18th and 26th			477	17th Oct.			621	14th			566	13th
			399	24th Oct.			436	24th			623	21st			570	21st
October	,,	,,	453	31st	286		440	30th	,,	,,	626	28th			574	27th
			·36462	7th			·36448	6th			·36629	4th Change of			·36578	3rd
			466	14th			452	13th			437	12th B.L. on 11th			580	10th
			472	21st			456	20th			440	18th			583	18th
November	,,	,,	477	28th	,,		459	27th	,,	,,	443	25th			586	24th
											·36446	2nd			·36587	1st
			·36482	5th			·36462	4th			448	9th			587	8th
			489	12th			464	11th			452	17th			590	15th
			494	19th			468	18th			455	23rd			591	22nd
December	,,	,,	499	26th	,,		471	25th	,,	,,	457	30th			591	29th

N.B.—The values of the base lines are obtained from the means of consecutive 5-weekly observations owing to the base lines changing rapidly; the mean date is given in column of remarks; the values of the base lines for any other date is obtained by interpolation.

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TABLE VI—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 7, at the Alibāg observatory.

Temperature of reduction 85°F.

Months	1910				1911				1912				1913			
	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	Log m	$\log\left(1+\frac{p}{r^3}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
			·36593	5th							·36570	1st			·36646	15th
			593	19th			·36481	4th								
January	2·97282	Ī·99304	595	26th	2·97255	Ī·99265			2·97220	Ī·99265	575	16th	2·97212	Ī·99265	649	22nd
							83	11th								
			·36597	2nd												
			600	9th			·36486	15th			·36573	1st			·36651	1st
			602	16th												
February	,,		604	23rd	,,		490	22nd	,,		576	15th	,,		653	15th
			·36605	2nd			·36492	1st								
			609	9th			495	8th			·36577	1st			·36654	5th
			614	16th			497	16th			579	8th			656	12th
			619	23rd			500	23rd			581	15th			659	19th
March	,,		622	31st	,,		503	30th	,,		584	22nd	,,		662	26th
															·36664	2nd
			·36624	6th			·36507	5th			·36588	1st			666	9th
			628	13th			509	12th			590	16th			669	16th
			631	21st			510	19th							671	23rd
April	,,		633	27th	249		514	26th	215		592	22nd	,,		674	30th
											·36594	1st				
							·36516	3rd			597	8th			·36676	7th
							519	15th			600	15th			679	14th
							522	23rd			604	22nd			682	21st
May	,,		·36637		,,		526	31st	,,		607	29th	,,		686	28th
					249*		·36528	* to 5th			·36611	5th				
				Change of B.L.							614	12th				
June	,,		·36430	on 1st June	220†		530	† from 16th	,,		614	26th	,,		·36690	

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TABLE VI.—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 7, at the Alibāg observatory.

Temperature of reduction 85°F.

Months	1910				1911				1912				1913			
	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
July	2·97282* 265†	Ī·99265	·36433	* to 6th † from 13th	2·97220	Ī·99265	·36530		2·97215	Ī·99265	·36613		2·97212	Ī·99265	·36685	
											·36615	7th				
			·36438	17th			·36532	2nd			617	14th			·36689	6th
			441	24th							619	21st			690	13th
August	„		442	31st	„		535	16th	„		622	28th	„		694	20th
			·38445	8th			·36538	1st			·36624	5th				
			448	14th			541	8th			625	11th			·36695	14th
			451	21st			544	15th			628	18th				
September	„		457	28th	„		547	22nd	„		630	25th	„		·36494	from 15th to 30th
											·36634	1st				
			·36459	5th			·36550	1st			636	9th				
			462	13th							638	16th				
			465	19th							638	23rd				
October	„		467	26th	„		554	16th	„		639	30th	„		·36498	
			·36467	2nd												
			469	9th												
			472	16th												
			472	23rd			·36560	1st								
November	„		475	29th	„		561	16th	„		·36641		„		·36501	
							·36564	1st								
December	„		·36477		„		566	15th	„		·36644		„		·36502	

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TABLE VI—(*Continued*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of Magnetometer No. 7, at the Alibāg observatory.

Temperature of reduction 85°F.

Months	1914				1915				1916				1917			
	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·97212	Ī·99265	·36505		2·97212	Ī·99265	·36556		2·97157	Ī·99265	·36606		2·97156	Ī·99265	·36634	
February	,,	,,	·36508		,,		·36559*	* 1st to 24th	,,	,,	·36606	1st to 23rd	,,	,,	·36639	
							·36565	1st								
							570	10th			·36611	1st				
March	,,	,,	·36513		,,		574	31st	,,	,,	614	16th	,,	,,	·36642	
			·36517	1st												
			519	8th											·36645	4th
			522	15th			·36577	14th			·36616	12th			647	11th
			525	22nd			580	21st			618	19th			649	18th
April	,,	,,	528	29th	,,		581	28th	,,	,,	620	26th	,,	,,	650	25th
			·36532	6th			·36584	5th								
			536	13th			586	12th			·36622	3rd			·36653	2nd
			539	20th	212*		588	19th * to 12th			624	10th			655	9th
May	,,	,,	541	27th	157†		589	26th † from 19th	,,	,,	626	17th	,,	,,	657	16th
June	,,	,,	·36541		,,		·36592		,,	,,	·36628		,,	,,	·36658	
July	,,	,,	·36537		,,		·36587		,,	,,	·36626		,,	,,	·36658	
August	,,	,,	·36537		,,		·36587		,,	,,	·36619		,,	,,	·36660	
September	,,	,,	·36542		,,		·36592		,,	,,	·36626	1st to 27th	,,	,,	·36657	
			·36549	7th							·36629	4th				
			552	14th							632	11th				
October	,,	,,	554	21st	,,		·36597	1st to 27th	,,	,,	634	18th	,,	,,	·36659	
			·36557	1st			·36002	3rd								
November	,,	,,	559	15th	,,		005	15th	,,	,,	·36633		,,	,,	·36661	
December	,,	,,	·36556		,,		·36603		,,	,,	·36633		,,	,,	·36661	

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TABLE VI—(*Concluded*).

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, the magnetic moment (m) and the base line values of magnetometer No. 7, at the Alibāg observatory.

Temperature of reduction 85°F.

Months	1918				1919				1920							
	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks	log m	$\log\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\right)^{-1}$	B. L.	Remarks
January	2·97156	$\bar{1}$·99265	·36663		·97148	$\bar{1}$·99265	·36686		2·97123	$\bar{1}$·99233	·36713					
February	,,	,,	666		,,	,,	686		,,	,,	714					
							690	19th								
March	152	,,	668		,,	,,	692	26th	,,	,,	719					
							·36695	2nd								
							698	10th								
							698	16th								
							701	23rd								
April	,,	,,	671		,,	,,	703	30th	,,	,,	724					
							·36704	7th								
May	,,	,,	673		,,	,,	707	23rd	,,	,,	730					
June	,,	,,	678		,,	,,	·36707									
					148*			*to 2nd								
July	148	,,	680		123†	233†	·36708	†from 9th								
August	,,	,,	676		,,	,,	·36709									
September	,,	,,	678		,,	,,	·36710									
October	,,	,,	682		,,	,,	·36714									
November	,,	,,	684		,,	,,	·36712									
December	,,	,,	682		,,	,,	·36714									

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TABLE VII

The distribution factor $\left(1+\frac{P}{r^2}+\frac{Q}{r^4}\ldots\right)^{-1}$, and the magnetic moment (m) of the field magnets.

Period	log m	log $\left(1+\frac{p}{r^2}+\frac{q}{r^4}\right)^{-1}$
Magnet 1 A		
17th Mar. 1902 to 27th Nov. 1902	3·00181	I·99325
7th Nov. 1902 to 6th April 1903	177	,,
7th April 1903 to 12th May 1903	163	,,
3rd Nov. 1903 to 5th Dec. 1903	143	,,
18th Dec. 1903 to 19th Dec. 1903	140	,,
2nd Jan. 1904 to 3rd March 1904	136	,,
18th March 1904 to 1st Jan. 1905	121	,,
15th Jan. 1905 to 28th April 1905	120	,,
Magnet 2 A		
5th Jan. 1906 to 24th May 1906	2·98035	I·99233
14th Nov. 1906 to 12th Dec. 1906	2·97975	I·99214
4th Jan. 1907 to 25th April 1907	974	,,
26th Nov. 1907 to 17th Dec 1907	973	,,
20th Dec. 1907 to 27th Dec. 1907	968	,,
1st Jan. 1908 to 29th April 1908	946	,,
1st May 1908 to 13th Nov. 1908	945	,,
14th Nov. 1908 to 5th Jan. 1909	780	,,
6th Jan. 1909 to 13th Jan. 1909	764	,,
20th Jan. 1909 to 26th Feb. 1909	759	,,
16th Nov. 1909 to 7th Dec. 1909	758	I·99196
9th Dec. 1909 to 17th Jan. 1910	739	,,
8th Feb. 1910 to 21st April 1910	718	,,
Magnet 3 A		
15th Feb. 1902 to 28th April 1902	2·99678	I·99365
22nd Oct. 1902 to 21st Dec. 1902	452	339
26th Dec. 1902 to 28th Feb. 1903	425	,,
3rd March 1903 to 10th May 1903	419	,,
13th May 1903 to 1st June 1903	406	,,
23rd Oct. 1903 to 19th Jan. 1904	391	,,
21st January 1904	2·98098	I·99389
22nd January (morning)	2·96291	,,
22nd January (afternoon) to 23rd January 1904	212	,,
10th March to 31st March 1904	155	,,
1st April 1904 to 13th April 1904	147	,,
15th April 1904 to 19th May 1904	2·95969	,,
22nd Oct. 1904 to 29th Nov. 1904	959	,,
1st Dec. 1904 to 30th March 1905	958	,,
1st April 1905 to 18th May 1905	956	,,
21st Oct. 1905 to 25th Dec. 1905	940	,,
29th Dec. 1905 to 10th May 1906	891	,,
19th Oct. 1906 to 18th May 1907	836	,,
19th Oct. 1907 to 10th Jan. 1908	830	,,
26th Oct. 1908 to 25th Feb. 1909	829	,,
6th March to 16th June 1909	820	,,
4th Nov. 1909 to 5th March 1910	727	,,
7th March 1910 to 17th Dec 1910	711	,,
31st Dec. 1910 to 5th Jan. 1911	710	,,
11th Jan. 1911 to 8th April. 1911	708	,,
14th Jan. 1913 to 2nd April 1913	697	,,
8th Nov. 1913 to 11th Nov. 1914	687	,,
13th Nov. 1914 to 17th May 1915	686	,,
6th Jan 1920 to 2nd Feb. 1920	651	,,
5th Feb. 1920 to 6th Feb 1920	630	,,
8th Feb. 1920 to 10th March 1920	577	,,
11th March to 17th March 1920	564	,,
18th March 1920 to 9th April 1920	548	,,
Magnet 4 A		
27th Nov. 1901 to 1st Feb 1902	2·94002	I·99547*
4th Feb. 1902 to 26th April 1902	2·94002	I·99228
25th Oct. 1902 to 26th Oct. 1902	2·93979	I·99260
3rd Nov. 1902 to 23rd Nov. 1902	970	,,
2nd Dec. 1902 to 31st Dec. 1902	966	,,
1st Jan. 1903 to 31st Jan. 1903	963	,,
3rd Feb. 1903 to 12th April 1903	958	,,
14th April to 22nd April 1903	950	,,
Magnet 4 A (*Continued*).		
28th April to 30th April 1903	2·93942	I·99260
23rd Oct. 1903 to 10th Feb. 1904	932	,,
14th Feb. to 30th March 1904	899	,,
2nd April 1904 to 4th May 1904	890	,,
22nd Oct 1904 to 24th Oct. 1904	883	,,
25th Oct. 1904 to 29th Nov. 1904	2·93883	I·99296
2nd Dec. 1904 to 14th Jan. 1905	879	,,
17th Jan. 1905 to 25th Feb. 1905	875	,,
4th March to 18th April 1905	871	,,
22nd April 1905 to 8th May 1905	841	,,
21st Oct 1905 to 25th Oct. 1905	836	I·99273
8th Nov. 1905 to 27th April 1907	827	,,
19th Oct. 1907 to 23rd Oct. 1907	825	,,
18th Nov. 1907 to 11th April 1909	824	,,
4th Nov. 1909 to 23rd Feb. 1911	823	,,
6th March to 2nd July 1911	822	,,
7th July. 1911 to 13th July 1911	821	,,
26th Nov. 1912 to 3rd Nov. 1913	820	,,
6th Jan. 1914 to 26th Jan. 1914	819	,,
15th Oct. 1919 to 8th May 1920	816	,,
Magnet 5 A		
1st Oct. 1902 to 3rd Dec. 1902	2·97384	I·99369
5th Dec. 1902 to 31st Dec. 1902	2·96756	I·99338
8th Jan. 1903 to 29th May 1904	755	,,
8th Nov. 1904 to 15th May 1905	754	I·99311
21st Oct. 1905 to 13th May 1906	753	,,
19th Oct. 1906 to 23rd April 1907	666	,,
27th Apr. 1907 to 22nd May 1907	651	,,
19th Oct. 1907 to 30th Nov. 1907	626	,,
11th Dec. 1907 to 29th Jan. 1908	623	,,
1st. Feb. 1908 to 10th Apr. 1908	621	,,
21st Apr. 1908 to 13th May 1908	619	,,
25th Oct. 1908 to 29th Oct. 1908	618	,,
12th Nov. 1908 to 11th Dec. 1908	594	,,
12th Dec. 1908 to 31st Dec. 1908	576	,,
4th Jan. 1909 to 27th Feb. 1909	573	,,
2nd Mar. 1909 to 31st Mar. 1909	564	,,
3rd April 1909 to 20th Apr. 1909	560	,,
27th Apr. 1909 to 30th Apr. 1909	557	,,
4th Nov. 1909 to 8th Nov. 1909	2·96557	,,
15th Nov. 1909 to 8th Apr. 1910	556	,,
18th Apr. 1910 to 3rd May. 1910	555	,,
29th Sept. 1910 to 27th Oct. 1910	543	,,
20th Nov. 1910 to 6th Apr. 1911	541	,,
11th Apr. 1911 to 20th Apr 1911	539	,,
12th Oct. 1911 to 18th Nov. 1911	538	,,
20th Nov. 1911 to 8th Mar. 1912	534	,,
14th Mar. 1912 to 19th Apr. 1912	530	,,
28th Oct. 1912 to 2nd Apr. 1913	421	,,
27th Oct. 1913 to 31st Oct. 1913	409	,,
8th Jan. 1914 to 27th Jan. 1914	408	,,
5th Mar. 1915 to 21st Mar. 1915	406	,,
23rd Mar. 1915 to 8th May 1915	394	,,
22nd Mar. 1916 to 12th Apr. 1916	393	,,
11th Oct. 1919 to 6th May 1920	318	,,
Magnet 6 A		
4th Feb. 1902 to 27th April 1903	2·98984	I·99315
2nd May 1903 to 5th May 1904	965	,,
7th May 1904 to 26th Oct. 1904	964	,,
8th Nov. 1904 to 25th Oct. 1905	963	,,
6th Nov. 1905 to 20th Jan. 1907	946	,,
25th Jan. 1907 to 22nd May 1907	942	,,
19th Oct. 1907 to 14th May 1908	928	,,
26th Oct. 1908 to 23rd Mar. 1909	914	,,
26th Mar. 1909 to 31st Mar. 1909	899	,,
4th Nov. 1909 to 26th April 1910	896	,,
24th Oct. 1910 to 30th Oct. 1910	892	,,
4th Dec. 1910 to 30th Jan. 1911	890	,,
3rd Feb. 1911 to 20th April 1911	888	,,

* r = 30 cms.

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TABLE VII—(*Concluded*).

The distribution factor $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\ldots\right)^{-1}$, and the magnetic moment (m) of the field magnets.

Period	log m	log $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-1}$	Period	log m	log $\left(1+\frac{P}{r^3}+\frac{Q}{r^4}\right)^{-}$
Magnet 6 A (*Continued*)			Magnet 10 A (*Continued*)		
25th Oct. 1911 to 27th Oct. 1911	2·98887	$\bar{1}$·99315	26th Nov. 1907 to 12th Dec. 1907	2·93123	$\bar{1}$·99390
4th Nov. 1911 to 21st April 1912	882	,,	13th Dec. 1907 to 29th Jan. 1908	110	,,
26th April 1912	876	,,	8th Feb. 1908 to 30th April 1908	095	,,
28th Oct. 1912 to 14th April 1913	870	,,	23rd Nov. 1908 to 5th Jan. 1909	084	,,
12th Sept. 1913 to 7th April 1915	868	,,	9th Jan. 1909 to 13th Jan. 1909	083	,,
11th April 1915 to 7th May 1915	855	,,	16th Jan. 1909 to 7th Feb. 1909	058	,,
11th Jan. 1916 to 18th Apr. 1916	844	$\bar{1}$·99298	8th Feb. 1909 to 31st Mar. 1909	030	,,
5th Dec. 1916 to 3rd Jan. 1917	843	,,	23rd Nov. 1909 to 24th Nov. (forenoon) 1909	2·92604	,,
26th Feb. 1917 to 12th Apr. 1917	841	,,	24th Nov. (afternoon) 1909 to 30th Nov. 1909	129	,,
8th Jan. 1918 to 30th Mar. 1918	835	,,	5th Dec. 1909 to 17th Dec. 1909	2·92084	,,
18th Apr. 1918 to 24th Apr. 1918	834	,,	24th Dec. 1909 to 29th Mar. 1910	068	,,
7th Jan. 1919 to 12th Jan. 1919	831	,,	5th Apr. 1910 to 26th Apr. 1910	044	,,
20th Jan. 1919 to 13th Nov. 1919	824	,,	1st Nov. 1910 to 6th Mar. (forenoon) 1911	042	,,
18th Nov. 1919 to 19th Mar 1920	823	,,	6th Mar. (afternoon) 1911 to 12th Apr. 1911	2·91960	,,
Magnet 10 A			13th Apr. 1911 to 22nd July 1911	948	,,
			2nd Nov. 1911 to 15th Feb. 1912	941	,,
23rd Oct. 1903 to 16th Nov. 1903	2·93561	$\bar{1}$·99390	16th Feb. 1912 to 23rd Feb. 1912	938	,,
17th Nov. 1903 to 30th Dec. 1903	551	,,	26th Feb. 1912 to 30th Mar. 1912	934	,,
3rd Jan. 1904 to 31st Mar. 1904	545	,,	31st Mar. 1912 to 18th Jan. 1913	873	,,
2nd April 1904 to 4th Nov. 1904	536	,,	27th Oct. 1913 to 2nd Dec. 1913	865	,,
4th Dec. 1904 to 4th Feb. 1905	535	,,	6th Dec. 1913 to 8th Dec. 1913	864	,,
21st Oct. 1905 to 12th Feb. 1906	515	,,	9th Dec. 1913 to 16th Apr. 1914	864	$\bar{1}$·99368
22nd Feb. 1906 to 27th Feb. 1906	514	,,	12th Mar 1920 to 14th Feb. 1921	2·91829	,,
1st Mar. 1906 to 27th Mar. 1906	495	,,	8th Oct. 1921 to 13th Mar. 1922	,,	$\bar{1}$·99429
1st May 1906 to 30th Mar. 1906	470	,,	19th Sept. 1922 to 23rd Oct. 1922	,,	$\bar{1}$·99262
13th Nov. 1906 to 5th Dec. 1906	225	,,	12th Dec. 1922 to 19th Feb. 1923	,,	$\bar{1}$·99246
15th Dec. 1906 to 11th April 1907	133	,,	11th Apr. 1923 to 18th Apr. 1923	2·91819	,,
23rd Apr. 1907 to 26th Apr. 1907	132	,,			

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TABLE VIII.

Magnetometer No. 19. Magnet No. 19 (Toungoo).

Year	Month	Comparing magnet	Base Line with comparing magnet	Base Line with magnet No. 17	Base Line with magnet No. 19	17 − 19
			C.G.S.	C.G.S.	C.G.S.	
1904	November ...	17		·33166	·33198	
			= −32γ at Dehra Dun, or, at Toungoo =			−37 γ
1905	December ...	10A	·38323	·38280	·38318	−38 ,,
1907	January ...	2A	·38246	·38151	·38187	−36 ,,
	Mean difference 17 − 19		...	...	...	−37γ

Magnetometer No. 19. Magnet No. 5B (Toungoo).

1908	January ...	10A	·38388	·38345	·38341	+ 4γ

Magnetometer No. 19. Magnet No. 19A (Toungoo).

1908	December ...	10A	·38556	·38513	·38535	−22γ
1909	December ...	10A	·38530	·38487	·38510	−23,,
1910	December ...	10A	·38554	·38511	·38534	−23,,
1911	July ...	10A	·38542	·38499	·33521	−22,,
1912	December ...	10A	·38488	·38445	·38467	−22,,
1913	December ...	10A	·38461	·38418	·38440	−22,,
	,, ...	,,	671	628	650	
1915	April ...	3A	·38614	·38592	·38613	−21,,
1916	February ...	6A	·38611	·38584	·38605	−21,,
1917	February ...	6A	·38608	·38581	·38601	−20,,
1918	March ...	6A	·38585	·38558	·38583	−25,,
	,, ...	,,	718	691	716	
1919	February ...	6A	·38698	·38671	·38693	−22,,
1920	February ...	4A	·38656	·38644	·38667	−23,,
	Mean difference 17 − 19A		...	...	...	−22γ

Magnetometer No. 16. Magnet No. 16 (Kodaikānal)

Year	Month	Comparing magnet	Base Line with comparing magnet	Base Line with magnet No. 17	Base Line with magnet No. 16	17 − 16
			C.G.S.	C.G.S.	C.G.S.	
1903	January ...	1A	·37089	·37067	·37078	−11γ
1904	February ...	1A	·37048	·37026	·37037	−11,,
1905	March ...	1A	·37029	·37007	·37017	−10,,
1906	January ...	10A	·37039	·36998	·37007	− 9,,
1906	May ...	2A	·37083	·36991	·37004	−13,,
1907	February ...	10A	·37017	·36976	·36989	−13,,
1907	December ..	10A	·37008	·36967	·36978	−11,,
1909	January ...	10A	·36995	·36952	·36963	−11,,
1910	February ...	2A	·37027	·36935	·36946	−11,,
1911	February ...	10A	·36974	·36933	·36944	−11,,
1912	February ...	10A	·36951	·36910	·36920	−10,,
			·37219	·37178	·37188	
1913	March ...	5A	·37207	·37188	·37199	−11,,
1913	December ...	6A	·37199	·37173	·37184	−11,,
1915	April ..	6A	·37397	·37371	·37382	−11,,
1916	March ...	6A	·37384	·37358	·37370	−12,,
1917	January ...	6A	·37381	·37355	·37366	−11,,
1918	February } March } ...	6A	·37372	·37346	·37357	−11,,
1919	February ...	6A	·37378	·37352	·37364	−12,,
1919	December ...	5A	·37358	·37339	·37351	−12,,
	Mean difference 17 − 16		...	...	...	−11γ

γ = ·00001 C.G.S.

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TABLE VIII.—(*Concluded*).

Magnetometer No. 20. Magnet No. 20 (Barrackpore).

Year	Month	Comparing magnet	Base Line with comparing magnet	Base Line with magnet No. 17	Base Line with magnet No. 20	17 – 20
			C.G.S.	C.G.S.	C.G.S.	
1903	December ...	1A	·36973	·36952	·36963	−11γ
1904	November ...	1A	·36909	·36888	·36899	−11,,
1905	February ...	1A	·36880	·36859	·36870	−11,,
1906	January ...	5A	·36861	·36842	·36853	−11,,
1906	December ...	2A	·37129	·37037	·37048	−11,,
1907	January ...	10A	·37079	·37038	·37049	−11,,
1907	December ...	2A	·37104	·37012	·37023	−11,,
1908	December ...	2A	·37009 127	·37007 035	·37018 046	−11,,
1909	December ...	10A	·37114	·37073	·37084	−11,,
1913	December ...	10A	·37141	·37100	·37110	−10,,
1914	January ...	10A	·37139	·37098	·37107	− 9,,
1914	December ...	3A	·37137	·37116	·37127	−11,,
1915	April ...	5A	·37135	·37116	·37127	−11,,
	Mean difference 17 – 20 ...		...	...	...	−11γ

Magnetometer No. 23. Magnet 23 (of the Colaba observatory).

Year	Month	Comparing magnet	Base Line with comparing magnet	Base Line with magnet No. 17	Base Line with magnet No. 23	17 – 23
1901	January & February ...	1A	·37166	·37145	·37184	−39γ
1903	February ...	1A	·37292	·37271	·37311	−40,,
1904	March ...	1A	·37045	·37024	·37064	−40,,
1905	March ...	1A	·37117	·37096	·37135	−39,,
1906	February & March ...	10A	·37181	·37140	·37180	−40,,
	Mean difference 17 – 23 ...		...	...	...	−40γ

Magnetometer No. 7. Magnet No. 7 of the Alibāg observatory.

Year	Month	Comparing magnet	Base Line with comparing magnet	Base Line with magnet No. 17	Base Line with magnet No. 7	17 – 7
			C.G.S.	C.G.S.	C.G.S.	
1906	February & March ...	10A	·36437	·36396	·36457	−61γ
1907	March ...	2A	·36561	·36470	·36554	−84,, ?
1908	January ...	2A	·36511	·36420	·36480	−60,,
1909	January ...	2A	·36491	·36400	·36461	−61,,
1909	November ...	6A	·36548	·36522	·36583	−61,,
1011	March ...	10A	·36477	·36436	·36496	−60,,
1912	March ...	10A	·36561	·36520	36581	−61,,
1913	January ...	6A	·36611	·36585	·36449	−64,,
1914	January ...	6A	·36470	·36444	·36505	−61,,
1915	February ...	6A	·36526	·36500	·36559	−59,,
1916	March ..	6A	·36579	·36553	·36613	−60,,
1916	December ...	6A	·36604	·36578	·36633	−55,,
1918	February ...	6A	·36631	·36605	·36666	−61,,
1919	January ...	6A	·36652	·36626	·36686	−60,,
1920	January ..	6A	·36678	·36652	·36713	−61,,
	Mean difference 17 – 7 ...		...	...	...	−61γ

γ = ·00001 C.G S.

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TABLE IX.

Magnetometer No. 1. Magnet No. 1 A.

Date of comparison		Base line No. 17	Base line No. 1 A	Diff. 17 − 1 A
Year	Month	C.G.S.	C.G.S.	
1902	November ...	·33260	·33241	−19 γ
,,	December ...	·33255	·33236	−19 ,,
1903	March ...	·33244	·33225	−19 ,,
,,	May ...	·33243	·33224	−19 ,,
,,	November ...	·33221	·33202	−19 ,,
,,	December ...	·33221	·33202	−19 ,,
1904	May ...	·33219	·33200	−19 ,,
,,	November ...	·33185	·33166	−19 ,,
1905	April ...	·33185	·33166	−19 ,,
Mean difference of 17 − 1 A =				−19 γ

Magnetometer No. 1. Magnet No. 2 A.

Date of comparison		Base line No. 17	Base line No. 2 A	Diff. 17 − 2 A
Year	Month			
1906	March ...	·33220	·33138	−82 γ
,,	May ...	·33222	·33140	−82 ,,
,,	November ...	·33199	·33117	−82 ,,
1907	April ...	·33257	·33175	−82 ,,
,,	November ...	·33086	·33005	−81 ,,
1908	May ...	·33115	·33033	−82 ,,
,,	November ...	·33092	·33110	−82 ,,
1909	February ...	·33092	·33009	−83 ,,
,,	November ...	·33141	·33069	−82 ,,
,,	,, ...	·33079	·32997	
1910	April ...	·33148	·33066	−82 ,,
Mean difference of 17 − 2 A =				−82 γ

Magnetometer No. 3. Magnet No. 3 A.

Date of comparison		Base line No. 17	Base line No. 3 A	Diff. 17 − 3 A
Year	Month	C.G.S.	C.G.S.	
1902	October ...	·33266	·33247	−19 γ
1903	May ...	·33243	·33224	−19 ,,
,,	October ...	·33218	·33199	−19 ,,
1904	May ...	·33219	·33200	−19 ,,
,,	October ...	·33187	·33168	−19 ,,
1905	May ...	·33185	·33166	−19 ,,
,,	October ...	·33157	·33137	−20 ,,
1906	May ...	·33159	·33140	−19 ,,
,,	October ...	·33136	·33118	−18 ,,
1907	May ...	·33194	·33175	−19 ,,
,,	October ...	·33024	·33006	−18 ,,
1908	June ...	·33052	·33032	−20 ,,
,,	October ...	·33030	·33011	−19 ,,
1909	June ...	·33030	·33011	−19 ,,
,,	November ...	·33095	·33076	−19 ,,
1910	April ...	·33085	·33066	−19 ,,
,,	October ...	·32993	·32975	−18 ,,
1911	April ...	·33014	·32995	−19 ,,
1912	October ...	·32841	·32822	
,,	,, ...	·32826	·32807	−19 ,,
,,	,, ...	·32927	·32908	
1913	January ...	·32910	·32891	−19 ,,
,,	April ...	·32905	·32886	−19 ,,
,,	October ...	·32859	·32840	−19 ,,
1914	May ...	·32852	·32832	−20 ,,
,,	October ...	·32832	·32813	−19 ,,
1915	May ...	·32820	·32802	−18 ,,
1920	January ...	·32713	·32695	−18 ,,
,,	April ...	·32713	·32694	−19 ,,
Mean difference of 17 − 3 A =				−19 γ

Magnetometer No. 4. Magnet No. 4 A.

Date of comparison		Base line No. 17	Base line No. 4 A	Diff. 17 − 4 A
Year	Month	C.G.S.	C.G.S.	
1902	October ...	·33247	·33257	−10 γ
1903	April ...	·33224	·33234	−10 ,,
,,	October ...	·33199	·33209	−10 ,,
1904	April ...	·33200	·33210	−10 ,,
,,	October ...	·33168	·33178	−10 ,,
1905	April ...	·33166	·33176	−10 ,,
,,	October ...	·33137	·33147	−10 ,,
1906	April ...	·33140	·33150	−10 ,,
,,	October ...	·33118	·33128	−10 ,,
1907	April ...	·33175	·33185	−10 ,,
,,	October ...	·33006	·33015	− 9 ,,
1908	April ...	·33033	·33043	−10 ,,
,,	October ...	·33011	·33021	−10 ,,
1909	April ...	·33012	·33021	− 9 ,,
,,	November ...	·33076	·33086	−10 ,,
1910	April ...	·33066	·33076	−10 ,,
1911	February ...	·32981	·32989	− 8 ,,
,,	July ...	·32989	·33001	−12 ,,
1912	November ...	·32905	·32915	−10 ,,
1913	March ...	·32885	·32895	−10 ,,
,,	October ...	·32840	·32850	−10 ,,
1914	January ...	·32834	·32844	−10 ,,
1919	October ...	·32701	·32711	−10 ,,
1920	May ...	·32695	·32703	− 8 ,,
Mean difference of 17 − 4 A =				−10 γ

γ = ·00001 C.G.S.

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TABLE IX.—(*Concluded*).

Magnetometer No. 5. Magnet No. 5A

Date of comparison		Base line No. 17	Base line No. 5A	Diff. 17−5A
Year	Month			
		C.G.S.	C.G.S.	
1902	October ...	·33247	·33264	−17 γ
,,	November ...	·33241	·33258	−17 ,,
,,	December ...	·33236	·33253	−17 ,,
1903	October ...	·33199	·33216	−17 ,,
1904	May ...	·33200	·33217	−17 ,,
,,	October ...	·33168	·33185	−17 ,,
1905	May ...	·33166	·33183	−17 ,,
,,	October ...	·33137	·33154	−17 ,,
1906	May ...	·33140	·33157	−17 ,,
,,	October ...	·33118	·33135	−17 ,,
1907	May ...	·33175	·33192	−17 ,,
,,	October ...	·33006	·33023	−17 ,,
1908	May ...	·33033	·33050	−17 ,,
,,	October ...	·33011	·33028	−17 ,,
1909	April ...	·33012	·33029	−17 ,,
,,	November ...	·33076	·33093	−17 ,,
1910	April ...	·33066	·33083	−17 ,,
,,	October ...	·32975	·32991	−16 ,,
1911	April ...	·32995	·33012	−17 ,,
,,	October ...	·32973	·32990	−17 ,,
1912	April ...	·32984	·33001	−17 ,,
,,	October ...	·32908	·32924	−16 ,,
1913	April ...	·32886	·32903	−17 ,,
,,	October ...	·32840	·32857	−17 ,,
1914	January ...	·32834	·32849	−15 ,,
1915	March ...	·32802	·32819	−17 ,,
,,	May ...	·32802	·32819	−17 ,,
1916	April ...	·32801	·32818	−17 ,,
1919	October ...	·32701	·32718	−17 ,,
1920	April ...	·32694	·32711	−17 ,,
	May ...	·32695	·32711	−16 ,,

Mean difference of 17−5A = −17γ

Magnetometer No. 6. Magnet No. 6A

Date of comparison		Base line No. 17	Base line No. 6A	Diff. 17−6A
Year	Month			
		C.G.S.	C.G.S.	
1902	October ...	·33247	·33270	−23 γ
1903	May ...	·33224	·33247	−23 ,,
,,	October ...	·33199	·33222	−23 ,,
1904	April ...	·33200	·33223	−23 ,,
,,	October ...	·33168	·33191	−23 ,,
1905	April ...	·33166	·33189	−23 ,,
,,	October ...	·33137	·33160	−23 ,,
1906	May ...	·33140	·33163	−23 ,,
,,	October ...	·33118	·33141	−23 ,,
1907	May ...	·33175	·33198	−23 ,,
,,	October ...	·33006	·33028	−22 ,,
1908	May ...	·33033	·33056	−23 ,,
,,	October ...	·33011	·33034	−23 ,,
1909	March ...	·33011	·33034	−23 ,,
,,	November ...	·33076	·33099	−23 ,,
1910	April ...	·33066	·33089	−23 ,,
,,	October ...	·32975	·32997	−22 ,,
1911	April ...	·32995	·33018	−23 ,,
,,	October ...	·32973	·32996	−23 ,,
1912	April ...	·32984	·33007	−23 ,,
,,	October ...	·32908	·32930	−22 ,,
1913	April ...	·32886	·32909	−23 ,,
,,	October ...	·32840	·32863	−23 ,,
1914	April ...	·32833	·32856	−23 ,,
,,	October ...	·32813	·32834	−21 ,,
1915	May ...	·32802	·32824	−22 ,,
1916	January ...	·32800	·32823	−23 ,,
,,	April ...	·32801	·32824	−23 ,,
,,	December ...	·32774	·32797	−23 ,,
1917	April ...	·32776	·32798	−22 ,,
1918	January ...	·32720	·32743	−23 ,,
,,	April ...	·32714	·32737	−23 ,,
1919	January ...	·32707	·32730	−23 ,,
,,	March ...	·32708	·32731	−23 ,,
,,	November ...	·32702	·32725	−23 ,,
1920	March ...	·32694	·32717	−23 ,,
,,	April ...	·32694	·32717	−23 ,,

Mean difference of 17−6A = −23γ

Magnetometer No. 10. Magnet No. 10A

Date of comparison		Base line No. 17	Base line No. 10 A	Diff. 17−10A
Year	Month			
		C.G.S.	C.G.S.	
1903	October ..	·33199	·33237	−38 γ
1904	May ...	·33200	·33237	−37 ,,
,,	October ...	·33168	·33202	−34 ,,
1905	October ...	·33137	·33174	−37 ,,
1906	May ...	·33140	·33177	−37 ,,
,,	November ...	·33117	·33154	−37 ,,
1907	April ...	·33175	·33212	−37 ,,
,,	November ...	·33005	·33042	−37 ,,
1908	April ...	·33033	·33070	−37 ,,
,,	November ...	·33010	·33047	−37 ,,
1909	March ...	·33011	·33048	−37 ,,
,,	November ...	·32997	·33034	−37 ,,
1910	April ...	·33066	·33103	−37 ,,
,,	November ...	·32972	·33010	−38 ,,
1911	April ...	·32995	·33032	−37 ,,
,,	June ...	·32992	·33030	−38 ,,
,,	July ...	·32989	·33027	−38 ,,
,,	November ...	·32974	·33011	−37 ,,
1912	April ...	·32984	·33020	−36 ,,
,,	November ...	·32905	·32942	−37 ,,
1913	January ...	·32891	·32928	−37 ,,
,,	October ...	·32840	·32876	−36 ,,
,,	November ...	·32836	·32873	−37 ,,
1914	March ...	·32833	·32870	−37 ,,
,,	April ...	·32833	·32870	−37 ,,
,,	October ...	·32813	·32850	−37 ,,
1920	March ...	·32694	·32731	−37 ,,

Mean difference of 17−10A = −37γ

γ = 00001 C.G.S.

TABLE X.

Abstract of Instrumental differences

17− 1A	= −19γ	at Dehra Dūn	= −0·00058H
17− 2A	= −82,,	,, ,, ,,	= −0·00248 ,,
17− 3A	= −19,,	,, ,, ,,	= −0·00058 ,,
17− 4A	= −10,,	,, ,, ,,	= −0·00030 ,,
17− 5A	= −17,,	,, ,, ,,	= −0·00052 ,,
17− 6A	= −23,,	,, ,, ,,	= −0·00070 ,,
17−10A	= −37,,	,, ,, ,,	= −0·00112 ,,
17− 16	= −11,,	at Kodaikānal	= −0·00029 ,,
17−19	= −37,,	,, Toungoo	= −0·00095 ,,
17−19A	= −22,,	,, ,,	= −0·00056 ,,
17− 5B	= + 4,,	,, ,,	= +0·00010 ,,
17−20	= −11,,	,, Barrackpore	= −0·00029 ,,
17−23	= −40,,	,, Colaba	= −0·00108 ,,
17− 7	= −61,,	,, Alibag	= −0·00165 ,,

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After the application of the instrumental differences to reduce all the instruments in terms of the Survey standard the next step was the corrections for the elimination of the diurnal variation, disturbance, and annual change in the magnetic elements for the reduction of the observations to epoch.

The Magnetic Committee of 1914 were of opinion that although diurnal variation is a function of local time yet by combining it with the disturbance correction at absolute time the error introduced into the correction for diurnal inequality and disturbance would be slight; but in the course of the computations it was apparent that the error is appreciable if the correction to the quantities are not dealt with separately. The corrections for diurnal inequality at field stations have therefore been interpolated from observatory values at the same local time and those for disturbance at the same absolute time, since the disturbance, as far as it is possible to measure the magnetograms, are practically simultaneous at all the observatories in India.

In the Magnetic Committee's report, page 3, it is stated that "In practice it is better instead of effecting the interpolation by assuming a different weighting of the observatories for each field station to divide the country into areas over each of which the corrections may be treated as constant, the areas being sufficiently numerous to make certain that the error in the correction at places on its boundary shall not be too large." A map of India which appears with the Committee's report in the appendix to this volume shows the division of the country into regions for the purpose of interpolating the diurnal inequality of field observations and the disturbance corrections from simultaneous readings at the observatories. There are two such maps, one for the period 1902-15 which was published with the Committee's report in 1914 and includes the Barrackpore observatory and the other subsequently prepared for the period 1915-20 with a little modification in the eastern portion of the map necessitated by the closing of the Barrackpore observatory in 1915.

The method of applying the diurnal inequality and disturbance corrections as well as that for annual change, as recommended by the Magnetic Committee in pages 2 and 3 of their report, is as follows:— Normal values of the magnetic elements as well as the average annual change at observatories were obtained from the charts 1a to 1c for declination, 2a to 2c for horizontal force and 3a to 3c for dip. In these charts the monthly mean values of each of the elements at the five observatories are plotted for the periods 1901·0 to 1909·0, 1909·0 to 1915·0 and 1915·0 to 1920·0; the original charts on which the values are plotted being on double the scale of the published ones. At the head of each chart the year is shown and each month is denoted by the vertical lines of the squared paper. The monthly means of each element are plotted along the vertical lines, the plotted points being joined up by broken lines. A mean line is then drawn to represent the normal values of each of the elements and the course of the average annual change. Appreciable changes in the curve of secular change are indicated in 1909 and 1915: the sections of the curve, appertaining respectively to the periods 1901 to 1909, 1909 to 1915 and 1915 to 1920, are approximately straight lines, representing an almost uniform change. In the declination curves only at the Toungoo observatory a change occurs in 1917 and not in 1915 as is the case for the other observatories.

The vertical divisions on the diagram for declination represent half a minute, in dip, one minute and in horizontal force, five gammas (C.G.S.).

Since the secular changes in the elements are subject to marked changes in their rate of progression in so short a space as divides the observatories, it is necessary to supplement the annual change data at observatories derived from the nine charts referred to above, by data based on observations at repeat stations, in order to reduce the observations at field stations, as accurately as possible, to epoch. Two charts of India, on which the annual changes were represented for each of the periods 1901·0 to 1909·0, 1909·0 to 1915·0 and 1915·0 to 1920·0, were prepared for the purpose in the following manner:—

After correcting the observations taken at all repeat stations for instrumental error, diurnal inequality and disturbance the average annual changes at each of these stations for the above three periods were derived from the corrected observations and entered up against the stations plotted in the charts appertaining to each of the three periods. The lines of equal annual change, at one minute apart for the declination and dip, and ten gammas apart for the horizontal force, were then drawn to conform to the plotted values. The uniformity of the curves through the points are remarkably good and it is only in a very few instances that a little smoothing out was necessary. From these charts thus graphically constructed the annual changes for each field station were determined by interpolation.

The lines of equal annual change are shown in maps Nos. 4 to 10 in this publication.

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With the aid of the map showing regional divisions, the nine charts 1a to 3c and the charts 4 to 10 (with the lines of equal annual changes) the reduction of the observations to epoch were computed as follows:—

Declinations and Horizontal Force.

(1) The observed value at a field station is first corrected for instrumental difference to reduce the value in terms of the standard— call this the reduced declination, or horizontal force, as the case may be.

(2) The diurnal inequality and disturbance at one or two observatories, according to the regional division in which the field station is situated, is then calculated thus:— The ordinate of the magnetograph curve at each observatory is measured at the corresponding instant of time at the field station, the value of this ordinate, after correcting for the temperature variation, applied to the base line value gives the value of the declination or horizontal force at the observatory at this particular time, the difference between this and the normal value as obtained from the straight line on the charts 1a to 3c, after applying the correction for diurnal inequality corresponding to the local time of the observation, gives the temporary disturbance at the observatory at the absolute time of observation.

(3) The above corrections, interpolated from one or two observatories as the case may be, according to the particular regional division in which the station lies, and applied to the reduced declination or horizontal force as in (1) gives the corrected value for the field station at the particular absolute time and date.

(4) The period from the date of observation to that of epoch is now calculated and the annual changes are taken from the charts of equal annual change appertaining to the period and applied to the corrected value of the magnetic element to reduce it to epoch.

Dip.—No correction for instrumental differences have been applied to the dip observations at field and repeat stations owing to the inconsistency in the results obtained in the comparative observations, as explained on page 24.

The correction for diurnal inequality has been applied throughout to the dip observations at all field and repeat stations. The mean probable error of a dip observation is about $\pm 1'$, the range of the diurnal inequality is about 3′, so that the application of the correction for diurnal inequality is advantageous; but the application of a correction for disturbance is more difficult and uncertain as it has to be deduced from the vertical and horizontal force magnetographs. 1134 stations were observed at prior to 1907 when no vertical force magnetographs were installed in our observatories and observations were taken at only 222 stations of the general survey between 1907 and 1911 when no reliable base lines could be obtained from the vertical force magnetographs in which large fluctuations were of frequent occurrence. No improvement could therefore be effected by the application of any corrections derived from uncertain base lines, since the quantities dealt with would be small as compared with the errors in the base lines and the errors of field observations which are as much as 2 to 3 minutes. From 1912, however, the vertical force magnetographs behaved more satisfactorily and besides, in place of the former bi-weekly absolute observations, daily observations with the earth-inductor were instituted, in consequence of which more reliable determinations of the base lines were obtained and the correction for disturbance has therefore been applied from 1912 to the observations taken at all repeat stations and a better determination was obtained of the annual change for the reduction of the field observations to epoch.

The correction for diurnal inequality and disturbance in vertical force was calculated in the same way as for declination and horizontal force and was then combined with the corrected horizontal force to obtain the dip at an observatory.

From the declination (D), Horizontal force (H) and the dip or inclination (I), corrected as above, the total force (F), the northerly component (X), the easterly or westerly component (Y) and the vertical component (Z) were computed by the following equations:—

$$F = H \sec D, \qquad X = H \cos D.$$
$$Y = X \tan D \qquad Z = H \tan I.$$

ACCURACY OF RESULTS

Accuracy of observations of the observatories.—Table A for the two observatories Dehra Dūn and Toungoo shows the precision of observations obtained at the observatories. The results have been derived from measurements of the base line values of the magnetographs which were steady during the months given in the tables.

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To determine the accuracy of dip is difficult as the vertical force base line values were seldom steady. In May 1920 the errors of observation with the earth-inductor at Toungoo were :—Average error 0′·3, maximum error 0′·8 and the probable error 0′·26: the actual errors are probably less as these are possibly affected by slight shifts of the magnet of the vertical force magnetograph.

TABLE A.

Months	Dehra Dūn observatory						Toungoo observatory					
	Horizontal force			Declination			Horizontal force			Declination		
	Average error	Maximum error	Probable error of a single observation	Average error	Maximum error	Probable error of a single observation	Average error	Maximum error	Probable error of a single observation	Average error	Maximum error	Probable error of a single observation
1920	γ	γ	γ	′	′	′	γ	γ	γ	′	′	′
January ...	3·8	10	3·3	0·20	0·4	0·16	2·6	8	2·3	0·13	0·3	0·10
February .	2·9	6	2·3	0·17	0·4	0·13	2·6	7	2·0	0·19	0·4	0·16
March ...	3·5	10	3·0	0·12	0·4	0·11	3·8	9	3·2	0·16	0·4	0·15
April ...	2·3	7	2·0	0·11	0·3	0·10	2·5	8	2·3	0·13	0·3	0·11
May ...	2·2	6	1·8	0·14	0·3	0·11	3·5	9	3·0	0·20	0·4	0·16

Accuracy of observations at field and repeat stations:—

In April 1915 a repeat station was established in the observatory compound at Barrackpore before that observatory was dismantled and observations were taken at the station exactly under the usual field conditions : the following errors of observation have been derived from the measurements of base lines of the Barrackpore observatory magnetographs from these observations. —

	H.F.	Decln.	Dip (with dip circle)
Average error	3·1γ	0′·23	0′·6
Maximum „	8·0γ	0′·30	2·3
Probable error of a single observation	2·8γ	0′·17	0·6

These errors show that the field observations are of the same order of precision as those taken at the observatories.

Accuracy of the method of reduction of the observations to epoch:—

Tables B and C give the values of declination, horizontal force and dip reduced to the epoch 1920·0 from observations taken in different years at 6 of the old and 12 of the new repeat stations respectively, and show the average and maximum errors in the reduction of the observations to epoch.

Table D gives the values of declination, horizontal force and dip reduced to the epoch 1920·0 from observations taken at 20 undisturbed field stations, where observations were repeated in different years, and shows the maximum and average errors in the reduction of the observations to epoch. The values are affected by site errors in addition to errors of observation and reduction.

From a consideration of the results in these tables we may say that

In declination the maximum error of reduction is			1′·4
„	„ average	„ „ „ „	0′·4
In Horizontal Force	the maximum	„ „ „ „	11γ
	„ average	„ „ „ „	4γ
In dip ...	„ maximum	„ „ „ „	3′·0
„	„ average	„ „ „ „	1′·6.

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TABLE B.

Udaipur I

Date of observation		Values reduced to epoch 1920-0		
		Horizontal force	Declination	Dip
		C.G.S.		
February	1903	35136	+ 0° 51′·5	35° 18′·5
January	1904	46	51·1	15·6
April	1906	29	51 2	17·7
March	1907	28	50·8	14·2
February	1908	34	51·1	15·2
January	1909	35	50 7	19·5
February	1910	47	50·9	15·2
November	1910	30	50 4	16·5
March	1912	35	50·9	15·7
February	1913	32	50·9	20·4
January	1915	31	50·7	17·0
February	1920	31	49·9	17·0
Mean	...	·35135	+ 0° - 50′·8	35° – 16′·5
Max. error	...	12γ	0′·9	3′·9
Average	...	5γ	0 3	1′·6

Quetta III

March	1903	·31861	+2° 51′·9	44° 43′·4
April	1904	854	53·3	45·2
,,	1906	50	52·5	45·0
,,	1907	59	52·6	37·2
May	1908	49	51·6	43 .6
February	1909	60	51·5	40·5
April	1910	55	53·0	40·8
March	1911	56	...	43 7
April	1912	40	51 .9	39·1
December	1912	51	52·4	40·6
,,	1914	53	52·2	41·4
	New	pillar		
December	1914	·31868	51·4	...
,,	1919	65	51·0	41·1
Mean for old pillar	...	·31853	+2° – 52′·3	44° – 41·8
Maximum error	...	13γ	1′·3	4′·6
Average error	...	4γ	0′·6	2·0

Bharatpur VI

Date of observation		Values reduced to epoch 1920-0		
		Horizontal force	Declination	Dip
		C.G.S.		
December	1902	·34327	+ 1° 16′·7	40° 2′·2
January	1904	44	16·8	39 58·0
April	1906	50	16·3	40 4·6
,,	1907	53	16·2	2·4
February	1908	29	15·8	39 58·7
,,	1909	40	16·2	40 0·2
April	1910	54	17·0	2·7
November	1910	42	16·6	39 57·9
March	1912	46	16 0	59·6
February	1913	42	16·3	40 4·5
March	1914	40	16·9	4·0
November	1914	38	16·9	4·4
February	1920	41	17·3	3·1
Mean	...	·34342	+ 1° – 16·5	40° 1′ 4
Max. error	...	15γ	0′·8	3′·5
Average error	...	6γ	0′·4	2′·3

Fyzābād No. X

November	1903	·35177	+ 0° 53·3	39° 4′·0
March	1906	186	51·3	6·3
November	1906	176	52·1	3·6
February	1908	183	53·4	4·5
November	1908	186	52·9	7·3
December	1910	173	54·2	7·7
April	1912	189	52·7	8·0
March	1913	185	51·8	6·6
,,	1914	186	53·0	8·2
,,	1915	181	53·2	6·0
	New	pillar		
March	1915	·35175	+ 0° – 53·6	39° – 5′·8
,,	1920	172	52·8	8·3
Mean for old pillar	...	·35182	+ 0° – 52′·8	39° – 6′·2
Max. error	...	9γ	1′·5	2′·6
Average error	..	4γ	0′·7	1′·4

Dhārwār VIII

Date of observation		Values reduced to epoch 1920-0		
		Horizontal force	Declination	Dip
		C.G.S.		
January	1903	·37843	– 1° 1′·2	16° 37′·7
,,	1904	57	1·8	43·2
February	1906	42	1·8	45·1
March	1907	49	1·7	41·5
December	1907	40	1·3	40·5
January	1909	34	1·9	42·9
February	1910	49	1·1	40·3
March	1911	56	2·2	41 8
,,	1912	59	2·2	40·4
February	1913	47	1·6	38·2
January	1914	44	1·9	43·8
April	1915	52	1·5	43·8
December	1919	51	2·9	42·1
Mean	..	·37848	– 1° 1′·8	16° 41′ 6
Max. error	...	14γ	1′·1	3′ 9
Average error	...	6γ	0′·3	1′ 4

Akyab XX

January	1905	·38604	– 0° 18′·2	25° 50′·8
,,	1906	603	16·5	49·9
February	1907	605	16·7	53·6
April	1907	611	16·9	...
,,	1908	602	17·0	48·3
November	1908	604	17·2	51·1
February	1910	609	17·8	45·2
January	1911	606	17·3	44·7
December	1912	600	17·5	...
November	1913	589	18·1	51·0
February	1915	596	17·6	51·9
April	1920	598	17·7	51·6
Mean	.	·38602	– 0° 17′·5	25° 49′·7
Max. error	...	13γ	1′·0	5′·6
Average error	...	4γ	0′·5	2′·2

γ = ·00001 C.G.S.

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TABLE C.

Peshawar XXVI.

Date of observation		Values reduced to epoch 1920-0		
		Horizontal force	Declination	Dip
		C.G.S.		
March	1910	·30359	+3° 31·0	50° 8·5
November	1910	61	30·7	11·7
April	1912	62	31 6	9·9
November	1912	44	29·8	10 7
April	1914	49	30·7	13 1
November	1914	58	31·4	12·9
	New	pillar		
November	1914	·30368	+3° 31′·2	50° 12′ 7
,,	1919	68	29 3	10 6
Mean for old pillar	...	·30356	+3° 30′·9	50° 11′·1
Max. error	...	12γ	1′·1	2′·6
Average error	...	6γ	0′ 5	1′·4

Raipur LXIII.

January	1911	·37236	−0° 9′·0	28° 59′·7
November	1911	46	8·2	56·8
March	1913	42	9·2	58·9
February	1914	43	9·3	61·7
December	1914	45	9·8	56·1
March	1920	42	9·9	56·9
Mean	...	·37242	−0° 9′·2	28° 58′·4
Max. error	...	6γ	1′·0	3′·3
Average error	...	2γ	0′·4	1′·7

Mirpur Khâs XXXI.

Date of observation		Values reduced to epoch 1920-0		
		Horizontal force	Declination	Dip
		C.G.S.		
March	1910	·34235	+1° 33′·5	37° 3·8
November	1910	26	32·9	4·8
March	1912	40	33·9	8·5
December	1912	35	34·4	4·7
March	1914	37	33·5	7·2
December	1914	48	32·5	6·8
,,	1919	40	33·0	4·7
Mean	...	·34237	+1° 33′·4	37° 5′·8
Max. error	...	11γ	1′·0	2′·7
Average error	...	5γ	0′·5	1′·5

Moulmein LXXII.

December	1907	·39628	−0° 16′·8	17° 41′·0
January	1910	13	16·9	...
,,	1912	28	17·2	40·1
,,	1914	13	17·7	38·3
March	1915	28	17·5	40·1
December	1919	24	17·9	39·9
Mean	...	·39622	−0° 17′·3	17° 39·9
Max. error	...	9γ	0′·6	1′·6
Average error	...	6γ	0′·3	0′·6

γ = ·00001 C.G.S.

Cannanore XXXVIII.

Date of observation		Values reduced to epoch 1920-0		
		Horizontal force	Declination	Dip
		C.G.S.		
February	1911	·38238	−2° 4′·3	9° 27·5
December	1913	41	4·5	29·9
April	1915	38	4·2	29·7
December	1919	47	4·2	29·4
Mean		·38241	−2° 4′·3	9° 29′·1
Max. error		6γ	0′·2	1′·6
Average error		3γ	0′·1	0′·8

Ajmer XXX.

December	1910	·34449	+1° 23′·3	38° 36′·7
March	1912	57	24·4	31·2
February	1913	44	23·6	35·9
,,	1914	47	24·3	39·0
January	1915	50	24·4	37·3
February	1920	44	24·4	37·2
Mean	...	·34449	+1° 24·1	38° 36′·2
Max. error	...	8γ	0′·8	5′·0
Average error	...	4γ	0′·4	1′·8

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TABLE C.—(*Concluded*).

Guntakal XXXV.

Date of observation		Values reduced to epoch 1920·0		
		Horizontal force	Declination	Dip
		C.G.S.		
March	1911	·38157	−1° 9′·8	16° 21′·6
,,	1913	53	9 ·2	20 ·8
December	1913	43	10 ·0	25 ·1
March	1915	43	9 ·5	21 ·5
February	1920	51	9 ·4	21 ·4
Mean	...	·38149	−1° 9′·6	16° 22′·1
Max. error	...	8γ	0′·4	3′·0
Average error	...	5γ	0′·3	1′·2

Perambūr XXXVII.

Date of observation		Values reduced to epoch 1920·0		
		Horizontal force	Declination	Dip
March	1911	·38641	−1° 35′·3	11° 14′·3
February	1912	41	35 ·2	8 ·2
January	1913	45	35 ·5	16 ·9
March	1915	47	35 ·2	15 ·3
February	1920	42	35 ·6	13 ·5
Mean	...	·38644	−1° 35·4	11° 13′·6
Max. error	...	3γ	0′·2	5′·4
Average error	...	2γ	0′·2	2 ·3

Monghyr L.

Date of observation		Values reduced to epoch 1920·0		
		Horizontal force	Declination	Dip
		C.G.S.		
January	1911	·36271	+ 0° 21′·3	36° 24′·0
,,	1912	76	21 ·0	24 ·2
March	1913	73	20 ·8	26 ·0
February	1914	67	21 ·6	27 ·8
April	1915	69	21 ·5	20 ·9
November	1919	80	21 ·3	23 ·1
Mean	...	·36273	+ 0° 21′·3	36° 24′·3
Max. error	...	7γ	0′·5	3′·5
Average error	...	4γ	0′·2	1′·7

Kāthgodām LVII.

Date of observation		Values reduced to epoch 1920·0		
		Horizontal force	Declination	Dip
April	1904	·33556	+ 1° 35′·7	43° 15 ·2
February	1909	54	36 ·4	17 ·3
November	1910	63	...	21 ·8
April	1913	55	36 ·3	19 ·5
March	1914	47	35 ·9	25 ·5
,,	1915	54	36 ·4	21 ·8
,,	1920	51	36 ·0	18 ·2
Mean	...	·33554	+ 1° 36′·1	43° 19′·9
Max. error	...	9γ	0′·4	5′·6
Average error	...	3γ	0′·2	2′·7

Sāntahār LXV.

Date of observation		Values reduced to epoch 1920·0		
		Horizontal force	Declination	Dip
		C.G.S.		
April	1911	·36783	+ 0° 17′·4	35° 13′·1
January	1912	88	17 ·1	11 ·0
February	1914	82	18 ·7	13 ·0
April	1915	84	18 ·8	12 ·2
November	1919	74	20 ·2	11 ·7
Mean	..	·36782	+ 0° 18′·4	35° 12′·2
Max. error	...	8γ	1′·8	1′·2
Average error	...	3γ	0′·9	0′·6

Myitkyina LXVIII.

Date of observation		Values reduced to epoch 1920·0		
		Horizontal force	Declination	Dip
December	1906	·36297	+ 0° 36 ·1	36° 31′·4
January	1910	309	35 ·4	31 ·3
December	1911	305	36 ·6	31 ·9
January	1914	300	37 ·1	27 ·8
March	1915	298	37 ·1	30 ·0
February	1920	298	37 ·3	27 ·9
Mean	...	·36302	+ 0° 36′·6	36° 30′·0
Max. error	...	7γ	1′·2	2′·2
Average error	...	4γ	0′·6	1′·5

γ = ·00001 C.G.S.

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TABLE D.

Field Stations.

Date of observation		Values reduced to epoch 1920·0		
		Horizontal Force	Declination	Dip
Sibi (54)				
December	1902	·32196	+ 2° 34′·5	43° 57′·2
February	1904	183	33 ·7	52 ·6
March	1910	187	34 ·8	50 ·5
Jaipur (162)				
April	1903	·34323	+ 1° 20′·5	39° 39′·2
February	1913	326	21 ·4	40 ·8
Raniganj (504)				
January	1904	·37166	+ 0° 4′·6	32° 46′·4
,,	1911	154	6 ·7	47 ·6
Buxar (512)				
March	1904	·36232	+ 2° 22′·0	36° 52′·9
November	1910	233	22 ·5	54 ·1
Anjhi (590)				
March	1904	·34487	+ 1° 7′·1	40° 32′·1
,,	1909	501	7 ·8	33 ·0
April	1910	488	8 ·4	34 ·1
Sutna (579)				
February	1904	·35933	+ 0° 34′·5	35° 24′·9
April	1908	943	34 ·4	22 ·4
Barwaha (556)				
December	1903	·36365	+ 0° 15′·9	30° 53′·2
April	1909	360	15 ·7	53 ·8
Jamtara (873)				
November	1905	·36720	+ 0° 10′·5	34° 0′·7
March	1911	30	10 ·3	33 53 ·1
Giridih (506)				
January	1904	·37717	+ 0° 4′·9	33° 59′·9
March	1911	23	6 ·4	59 ·3
Katrasgarh (505)				
January	1904	·36858	+ 0° 7′·7	33° 26′·8
December	1910	55	8 ·5	25 ·9

Date of observation		Values reduced to epoch 1920·0		
		Horizontal Force	Declination	Dip
Bhilsa (546)				
November	1903	·35564	+ 1° 37′·2	34° 13′·3
January	1910	79	36 ·4	17 ·0
Vizianagram (792)				
November	1904	·38618	− 1° 13′·1	23° 1′·5
January	1910	03	15 ·2	1 ·5
Danura (747)				
April	1905	·37346	− 0° 12·6	26° 40′·2
December	1911	32	12·2	43 ·6
January	1913	31	12·8	41 ·6
Kamptu (775)				
January	1908	·36878	− 0° 0′·1	28° 44′·8
,,	1912	97	2 ·4	45 ·2
Lumding (860)				
March	1906	·36728	+ 0° 12′·7	36° 48′·2
December	1908	34	12 ·6	49 ·2
February	1911	44	12 ·5	46 ·0
Dumka (874)				
November	1905	·36730	+ 0° 22′·4	34° 16′·7
February	1911	29	21 ·9	16 ·5
Parbatipur (836)				
January	1906	·36288	+ 0° 20′·8	37° 3′·6
December	1908	91	21 ·0	5 ·5
Raigarh (943)				
February	1906	·36846	− 0° 11′·9	25° 60′·7
December	1909	54	11·5	59 ·6
Bobbili (948)				
March	1906	·38222	− 0° 42′·4	23° 0′·7
December	1909	17	42 ·3	1 ·7
Mussoorie (1331)				
October	1911	·32858	+ 2° 58′·6	45° 9′·5
September	1913	60	58 ·4	11 ·8
October	1914	45	57 ·9	...

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REDUCTION TO THE KEW STANDARD

Before Captain H.A.D. Fraser, R.E., of the Survey of India, returned to India from England to commence the magnetic survey of India, he had completed a set of observations with No 1 magnetometer at Kew and as soon as this instrument reached India in January 1901 he took a set of observations at the Colaba observatory, Bombay, which was already in existence for many years before the magnetic survey of India was begun: these observations at Colaba were in close agreement and appeared to admit of a comparison between the Kew and Colaba standards but unfortunately the observations could not be utilized owing to the uncertainty of the moment of inertia of magnet No. 1A as obtained from an inertia bar which was subsequently found to be seriously lacking in uniformity of density, and it was not possible to redetermine the moment of inertia owing to the deterioration of the object glass of No. 1A magnet (used in the comparisons) which it would appear was rendered useless from the effects of chemical action in the lens and there was thus a break in the continuity of the record of this magnet. An opportunity has since offered for another comparison in declination and horizontal force between the Kew standard and magnetometer No. 10 with which observations were taken by Dr. J. de Graaff Hunter, Mathematical adviser to the Survey of India, in September and October 1922: this officer also made a comparison in declination and horizontal force at Val Joyeux; the results, corrected for the finally accepted values of the distribution coefficient, magnetic moment and moment of inertia, are as follows:—

In declination... Kew − 10 = −0′·2
Val Joyeux − 10 = +1′·0
∴ Kew − Val Joyeux = −1′·2 ... ... (i)

H.F. ... ... Kew − 10 = +10γ at Kew
Val Joyeux − 10 = +21γ at Val Joyeux.

The instrumental difference in horizontal force at each of these places will not remain the same with change of magnetic field as the difference depends upon the absolute value of the horizontal force at the place of observation and is generally, with close approximation, in proportion to the value of the horizontal force; it is expressed as a factor—

$$\text{Kew} - 10 = \frac{\cdot 00010}{\cdot 184} = +0\cdot 00054\ \text{H}$$

$$\text{Val Joyeux} - 10 = \frac{00021}{129} = +0\cdot 00107\ \text{H}$$

∴ Kew − Val Joyeux = −0·00053 H ... ... (ii)

but in "Results of comparisons of magnetic standards 1915-21," page 441, by J.A. Fleming of the Carnegie Institution of Washington—

In declination... I.M.S. − Kew = +0′·3 (1908 − 19)
I.M.S. − Val J = −1′·1 (1913)
Kew − Val Joyeux = −1′·4 ... ... (iii)

In H.F. .. I.M.S. − Kew ... = −0·00046 H (1914-15)
I.M.S. − Val Joyeux = −0·00099 H (1913)
Kew − Val Joyeux = −0·00053 H ... (iv)

The above results show that (i) and (ii) with the Survey of India magnetometer No.10 agree well with (iii) and (iv) as determined by the Carnegie Institution of Washington.

In 1909 comparative observations were taken against the Dehra Dūn standard by Dr. Showers, of the Carnegie Institution of Washington, with his instruments: the results of these observations serve as a check on the recent observations at Kew taken by Dr. J. de Graaff Hunter. The values of the horizontal force determined with the Dehra Dūn standard in 1909 are now corrected for the finally accepted value of the distribution coefficient, magnetic moment and moment of inertia; the mean difference in horizontal force between the C.I.W. and Dehra Dūn values does not therefore agree with the value as determined with the corrections used in 1909, vide the C.I.W. publication "Land Magnetic Observations", 1911-13 by Dr. L.A. Bauer and J.A. Fleming.

The difference in 1909 was +53 γ and the difference now with the finally accepted constants is

$$\text{C.I.W.} - \text{D.D.} + 44\gamma = \frac{\cdot 00044}{\cdot 332} = +0\cdot 00133\ \text{H.}$$

The comparisons in declination and dip in 1909 gave the following results:—

Declination ... Mean value of C.I.W. − D.D. = +0·1
Dip ... „ „ „ C.I.W. − D.D. = −0′·1

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In order to reduce the C.I.W. values to the provisional International Magnetic Standard (I.M.S.) adopted by the Carnegie Institution of Washington, the corrections to be applied are:—

For declination, $-0'\cdot1$, horizontal force, $-0\cdot00015$ H and for dip, $+0'\cdot5$; therefore,

In declination ...I.M.S.—D.D.= 0'.0
„ H.F. ...I.M.S.—D.D.= +0 ·00118 H
„ Dip ...I.M.S.—D.D.= +0'·4

but in "Results in comparison of magnetic standards, 1915 -21", by J.A.Fleming

In declination ...I.M.S.—Kew= +0'·3 (1908-19)
„ H.F. ...I.M.S.—Kew= −0 ·00046 H (1914-15)
„ Dip ...I.M.S.—Kew= −0'·8 (1902-19)

Therefore,

In declination ...Kew −D.D.= −0'·3 ... (vi)
„ H.F. ...Kew −D.D.= +0'·00164 ... (vii)
„ Dip ...Kew −D.D.= +1'·2

From the recent observations by Dr. J. de Graaff Hunter

In declination...Kew − 10= −0'·2 (i)
„ ...D.D. − 10= +0'·3
therefore Kew −D.D.= −0'·5 (viii)
In H.F. ..Kew − 10= +0 ·00054 H (ii)
D.D. − 10= −0 ·00111 H
therefore Kew −D.D.= +0 ·00165 H (ix)

The above results show that (vi) and (vii), derived from the C.I.W. comparison at Dehra Dūn in 1909 are in good agreement with (viii) and (ix) determined recently with the Survey of India magnetometer No. 10 at Kew.

To reduce the elements in the tables in this publication to the Kew standards the following corrections require to be applied algebraically to each :—

To declination ... − 0'·5
„ horizontal force... + 0 ·00165 H
„ dip ... + 1'·2.

EXPLANATION OF THE TABLES OF THE MAGNETIC ELEMENTS

Before explaining the arrangement of the tables it will be necessary to mention that the maps of the Survey of India consist of the $\frac{1}{\text{million}}$ or "India and Adjacent Countries" series on the scale of 1 inch = 15·783 miles, each sheet covering an area of 4 degrees of latitude by 4 degrees of longitude, extending over India and adjacent countries from longitude 44° to 124° in terms of Greenwich, and from latitude 4° to 40°. These maps are numbered from 1 to 136 and each is subdivided into 16 sheets of 1 degree of latitude by 1 degree of longitude; these degree sheets are distinguished by a letter of the alphabet according to the arrangement shown in the "Key to degree sheets" in map No. 12 in this publication.

In the first column of each of the tables of the magnetic elements (declination, horizontal force and dip) the degree sheets, included in the area embraced by the Magnetic survey, are given in serial order. In the second column the survey number of each station in the successive degree sheets are given in the order of decreasing latitudes and increasing longitudes, i.e. from the left hand top corner to the right hand bottom corner of the sheet, as indicated in map No. 12; the third column gives the name of each station. The geographical positions of the stations with approximate heights are indicated in the fourth, fifth and sixth columns, the longitude being in terms of the Greenwich meridian. The tabulation of the values under the headings Declination, Horizontal Force and Dip are self-explanatory and need no comment except that a plus sign has been used to denote East and a minus sign, West declination. In the case of dip a plus sign denotes that the north end of the needle is dipping and a minus sign that the south end is dipping. A plus sign against the annual changes in declination indicate an increase in the Easterly and a decrease in the Westerly declination and a minus sign the reverse. A plus sign against the annual changes in dip indicates an increase in northerly and a decrease in southerly dip and a minus sign the reverse.

Horizontal Force is expressed in the C.G.S. system and the annual change in gammas, where 1γ is used to denote 1×10^{-5} C.G.S.

The next lot of tables give the values of the total force and the northerly, easterly or westerly, and vertical components of the force: these tables are arranged in the same way as the previous tables and will be easily understood.

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The values of the magnetic elements in all these tables are given for the epochs 1909·0 and 1920·0 and are in terms of the Survey standard instruments at the Dehra Dūn observatory.

EXPLANATION OF THE MAPS

A new feature introduced in the magnetic maps which accompany this report is the scale of colours used for defining the intervals between the iso-magnetics: this is a decided advantage in assisting the eye to clearly trace the course these lines take and in giving due prominence to the magnetically disturbed areas.

The iso-magnetics in each of the eight coloured maps in this report have been reduced from larger scale maps of India; the method used for the construction of each was the same: the magnetic stations were carefully plotted on the maps and the value of the element for the epoch was entered against each. Iso-magnetics were then drawn through points determined by interpolation from surrounding values and these points were connected up by free-hand curves which are shown alternately in firm lines and broken lines, the areas between the firm lines being clearly defined by belts of colour according to the explanatory reference table in each map.

The lines of equal annual change shown in blue and red lines have been drawn as explained on page 57.

Maps 4 and 5.— The lines of equal declination are at intervals of half a degree, and are shown by firm lines for every whole degree and by broken lines for every half degree. The areas between every whole degree are shaded in tints of blue and red, the former colour increasing in depth of tone northwards from the line of no-declination indicates an increase in Easterly declination and the latter colour shows similarly the Westerly declination.

Maps 8 and 9. —The lines of equal dip are at intervals of 5° and are shown by firm lines for every 10° and broken lines for every 5°. The areas between the 10°-lines are shaded in tints of blue and red, the blue increasing in depth of shade with an increase in the northerly dip and the red increasing in depth of shade with an increase of southerly dip.

Maps 6,7 and 10,11.—Each pair of these maps show respectively the lines of equal horizontal force and the lines of equal total force at intervals of 1000 gammas. The areas between every 2000 gammas are shown by firm lines and between every 1000 gammas in broken lines. The areas between every 2000 gammas in each pair of maps are shaded in similar tints of colour but the colours used in the maps of horizontal force (8 & 9) are in the reverse order to those of the total force so as to correspond in each case with an increase of force from shades of green to brown, the increase of horizontal force being from north to south and that of total force from south to north.

Map 12.— This map shows the magnetic observatories, repeat stations and field stations of the Magnetic Survey. The reference table in the map explains the various symbols used to distinguish observatories, repeat stations and field stations. The map is divided up into four-degree squares which are subdivided into degree-squares in accordance with the arrangement of the numbering of the maps of the Survey of India: an explanation of the numbering is given on page 65.

Special features in the iso-magnetic maps.

The many peculiar twists and turns in the lines of equal declination and the disturbed patches of country, which show up so prominently in maps Nos. 4 and 5 are very remarkable and it would appear from what one sees of magnetic maps of other parts of the world that there are very few countries which are so magnetically disturbed as India is. The trend of the lines with their many sinuosities are in the same general direction. Between the 0° and 1°-east lines in the map for epoch 1909·0 as well as between 0° and 1°-west lines in the map for epoch 1920.0 there are wide gaps in the region of Burma where the change in declination is much slower than in the north-west where the spaces between degree lines become narrower as the declination values increase; this feature is difficult to understand without a knowledge of the actual magnetic conditions prevailing in the Eastern Hemisphere. It seems probable that the curves of the iso-magnetics in India are influenced to a large extent by a secondary magnetic pole which exists to the north-east, between the Chinese Empire and Siberia. East declination, as indicated on the map by the blue shades of colour, is decreasing northwards from the agonic line (line of no-declination); and West declination, as indicated by the red shades of colour, is increasing southwards.

With the exception of the region which includes Bengal, Assam and Burma, where the change in declination is slow and its movement complicated, the lines of equal annual change are fairly uniform in India and are drifting westwards rapidly.

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In 1909 the agonic line was near the 16° parallel of latitude and in 1920 moved up to 20 degrees on the west side of India and slued round to 25 degrees east side: at this rate of change the agonic line will reach the northern limit of India in the next 30 or 40 years, unless a reverse movement or cyclic change in the magnetic declination occurs before that time.

Although the scale of maps Nos.4 and 5 is small yet for practical purposes, in connection with the use of the compass, a very fair approximation to the value of the declination may be obtained by interpolation between the half degree lines of equal magnetic declination; the values so determined will be within the error of a compass which as a rule cannot be read or estimated to less than a quarter of a degree. For example, say the declination was required at Lucknow (Latitude 26° 50′, Longitude 80° 55′) for January 1924: by interpolating between the +0° 30′ and + 1° lines the probable value will be about +0° 54′ for the epoch 1920. The average annual change, by interpolating between the red lines of equal annual change on the map, is about −5′·1 : this annual change multiplied by 4 gives — 20′·4 for the change from 1920 to 1924 and when applied algebraically to +0° 54′ gives +0° 34′, the declination at Lucknow for January 1924, the plus sign indicating east declination. The value thus obtained from the map is almost identical with that calculated from the tables of the magnetic elements in part II, page 14, against degree sheet 63 B. If care is taken it is believed that by interpolation the error from the actual value at any place will not exceed, at the most, 10 minutes, unless the place is situated in a highly disturbed area.

In maps Nos. 6 and 7 there is little which calls for remark except that, as in the case of declination, the belts between the lines of equal horizontal force becomes narrower as the horizontal force decreases towards the north-west, and the change in horizontal force is slower to the south-east where the +30γ and +40γ lines of equal annual change appear to form a closed curve in the Bay of Bengal: this feature and also the adjacent curves are very complicated and difficult to account for. Across the greater part of India there is a fairly steady progression of the waves of annual change to the north-west.

In map Nos. 8 and 9 a very noticeable fact is the regular distribution of the dip; all the isoclinic lines, or lines of equal dip,, coinciding with parallels of Latitude. The magnetic equator or aclinic line (line of no-dip) in the map cuts the extreme south of India and the north Ceylon and it will be noticed that the change in the position of this line has been very small between the epochs 1909·0 and 1920·0. In the whole of India at present therefore the needle dips to the north leaving about two-thirds of Ceylon only with a southerly dip.

Although the magnetic declination is largely affected by local disturbances and the disturbed areas show up considerably more in maps Nos. 4 and 5 than in 6, 7, 8 and 9, yet it does not follow that the other two elements are any less disturbed. Declination shows only the direction of the magnetic force with respect to the north and the unit of angular measure of the lines of equal declination (i.e. half degree units used in maps Nos. 4 and 5) permits of the abnormalities being shown up in this small scale map; whereas, the unit of measure used in maps No. 6, 7, 8 and 9 for the lines of equal horizontal force and dip, i.e., 1000γ and 5 degrees respectively, are less suitable, since the disturbance changes in these two elements are with very few exceptions less than the interval separating the lines in these maps. If a smaller unit for the lines of equal horizontal force and a dip were used on the present scale of map there would be a great confusion of lines which would not be of any practical use, hence it was decided to employ the present units of division. A large scale map with a smaller unit-interval would show up the abnormalities of horizontal force and dip, but the preparation of a large scale map would entail a great deal of labour and the advantage to be derived would be small since the areas in which horizontal force and dip are disturbed are the same as those in which declination is disturbed and these have already been indicated in maps Nos.4 and 5.

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PART II

TABLES OF THE MAGNETIC ELEMENTS

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
34 J	359	Chaman ...	30 56 10	66 25 20	4450	28 3 10	+2 54·6	+2 54·1	+2 49·5	+1·7	+0·4	−1·4
	358	Saiyid Hamīd ...	30 35 20	66 43 20	4800	2 4 03	+2 54·5	+3 3·1	+2 56·9	+1·5	+0·3	−1·6
	III	QUETTA ...	30 12 21	66 59 55	5500	11 12 19	+2 51·1	+2 58·3	+2 51·0	+1·4	+0·2	−1·7
34 K	1264	Mastung Road ...	29 52 40	66 50 30	5400	7 4 10	+2 59·9	+2 59·6	+2 51·8	+1·4	+0·2	−1·8
	1263	Kurdagāp ...	29 45 30	66 26 10	5400	6 4 10	+2 50·6	+2 50·2	+2 44·0	+1·5	+0·3	−1·6
	1111	Nushki No. 1 ...	29 33 10	66 1 0	3310	14 10 06	+2 14·2	+2 17·5	+2 12·4	+1·5	+0·4	−1·5
	1262	Nushki ...	29 32 40	66 2 0	3200	3 4 10	+2 26·4	+2 25·9	+2 20·8	+1·5	+0·4	−1·5
	1112	Nushki No. 2 ...	29 32 0	66 0 40	3160	14 10 06	+2 14·2	+2 17·5	+2 12·4	+1·5	+0·4	−1·5
34 N	430	Hindubāgh ...	30 49 20	67 44 30	5800	2 4 04	+2 55·9	+3 2·6	+2 53·1	+1·4	0	−1·9
	431	Chinjan ...	30 34 10	67 55 50	7100	4 4 04	+2 59·6	+3 5·8	+2 55·2	+1·3	−0·1	−2·0
	357	Mangi ...	30 22 0	67 28 10	5200	31 3 03	+2 49·8	+2 57·9	+2 49·0	+1·4	+0·1	−1·9
34 O	360	Ab-i-Gum ...	29 48 10	67 23 10	2160	7 4 03	+2 40·3	+2 47·8	+2 37·8	+1·3	0	−2.0
	54 (*a*)	Sibi ...	29 32 39	67 51 40	450	21 3 10	+2 46·3	+2 46·5	+2 34·8	+1·2	−0 2	−2·1
35 M	289	Shāhdādpur ...	27 51 0	67 54 40	200	13 12 02	+2 17·7	+2 23·8	+2 9·4	+1·0	−0·4	−2·4
	290	Ghaibi Dero ...	27 36 0	67 38 50	200	17 12 02	+2 20·9	+2 26·9	+2 13·0	+1·0	−0·4	−2·3
	291	Gotemado ...	27 11 20	67 35 30	150	21 12 02	+2 17·9	+2 23·9	+2 9·5	+1 0	−0·4	−2·4
	48	Sita Road ...	27 2 30	67 51 10	150	21 12 01	+2 10·4	+2 16·7	+2 1·7	+0·9	−0·5	−2·4
35 N	292	Hairo Khān ...	26 49 20	67 28 10	170	25 12 02	+2 7·9	+2 13·9	+1 59·5	+1·0	−0·4	−2·4
	293	Tāndo Rahim Khān ...	26 30 30	67 25 40	150	28 12 02	+2 2·3	+2 8·3	+1 53·9	+1·0	−0·4	−2·4
	49	Bubāk Road ...	26 29 0	67 46 10	110	17 3 10	+1 58·0	+2 58·6	+1 43·1	+0·9	−0·5	−2·5
	294	Narani ...	26 7 30	67 32 50	1000	2 1 03	+1 53·2	+1 58·6	+1 43·1	+0·9	−0·5	−2·5
35 O	295	Pokrum Lundi ...	25 48 30	67 44 30	1000	5 1 03	+1 48·8	+1 53·6	+1 37·5	+0·8	−0·6	−2·5
	296	Belo ...	25 47 10	67 26 50	1000	8 1 03	+1 49·1	+1 54·5	+1 39·0	+0·9	−0·5	−2·5
	297	Kund ...	25 34 50	67 19 0	600	11 1 03	+1 48·2	+1 53·6	+1 38·1	+0·9	−0·5	−2·5
	298	Kharr ...	25 17 20	67 7 50	300	14 1 03	+1 41·8	+1 47·8	+1 32·3	+1·0	−0·5	−2·5
35 P	II	KARĀCHI ...	24 49 24	67 2 28	20	16 12 19	+1 26·3	+1 41·7	+1 26·2	+1·0	−0·5	−2·5
	39	Dābheji ...	24 48 54	67 29 50	100	28 11 01	+1 36·0	+1 41·7	+1 24·5	+0·8	−0·7	−2·6
	917	Mīrpur Sakro ...	24 33 10	67 37 0	80	5 12 05	+1 36·7	+1 39·2	+1 21·4	+0·8	−0·8	−2·6
	916	Shāhbandar ...	24 10 0	67 54 0	50	30 11 05	+1 32·0	+1 33·9	+1 13·9	+0·6	−1·0	−2·8
38 K	316	Thal ...	33 21 50	70 33 50	2500	17 4 03	+3 34·7	+3 42·7	+3 26·0	+1·4	−0·7	−2·5
	318	Latammar ...	33 7 0	70 51 50	1500	6 4 03	+3 31·5	+3 39·0	+3 20·6	+1·3	−0·9	−2·6
38 L	312	Sarai Naurang ...	32 49 40	70 47 0	1000	1 4 03	+3 26·2	+3 33·7	+3 15·3	+1·3	−0·9	−2·6
	311	Darra Pezu ...	32 19 20	70 44 20	1050	29 3 03	+3 24·4	+3 31·3	+3 12·3	+1·2	−1·0	−2·6
	310	Tānk ...	32 12 30	70 23 20	850	26 3 03	+3 17·8	+3 24·7	+3 6·3	+1·2	−0·9	−2·6
38 N	87	Dargai ...	34 30 10	71 53 50	1540	24 3 02	+3 56·2	+4 5·7	+3 46·2	+1·4	−1·0	−2·7
	XXVI	PESHĀWAR ...	34 0 40	71 33 40	1050	26 11 19	+3 29·6	+3 48·8	+3 29·3	+1·4	−1·0	−2·7
38 O	315	Kohāt ...	33 34 40	71 26 30	1650	13 4 03	+3 36·5	+3 43·9	+3 24·4	+1·3	−1·0	−2·7
	314	Bānda Dāud Shāh ...	33 16 40	71 11 10	1900	8 4 03	+3 23·7	+3 31·2	+3 11·7	+1·3	−1·0	−2·7
38 P	91	Massan ...	32 53 30	71 43 20	1300	2 4 02	+3 21 3	+3 29·4	+3 8·2	+1·2	−1·2	−2·8
	317	Dhanda ...	32 46 30	71 57 40	1300	23 4 03	+3 25·9	+3 32·2	+3 9·9	+1·1	−1·3	−2·9
	XXVII	KUNDIAN ..	32 27 30	71 28 20	650	30 11 19	+3 6·8	+3 27·8	+3 6 6	+1·1	−1·3	−2·8
39 B	429	Kila Saifulla ...	30 42 50	68 21 10	5110	30 3 04	+3 2·0	+3 8·2	+2 55·4	+1 3	−0·3	−2·2
	428	Kalu Killa ...	30 41 40	68 43 20	4900	28 3 04	+2 57·2	+3 2·9	+2 49·0	+1·2	−0 4	−2·3
	432	Loralai ...	30 21 30	68 36 30	4450	7 4 04	+2 52·9	+2 58·6	+2 44·7	+1·2	−0·4	−2·3
39 C	361	Spintangi ...	29 55 50	68 4 50	1900	8 4 03	+2 40·9	+2 47·8	+2 35·6	+1·2	−0·2	−2·2
	433	Puzza ...	29 54 0	68 42 40	5100	12 4 04	+2 42·8	+2 48·0	+2 33·5	+1·1	−0 5	−2·3
	417	Lehri ...	29 10 42	68 12 40	490	19 2 04	+2 22 2	+2 27·6	+2 13·7	+1·1	−0·4	−2·3
	418	Chirdi Dhabhar ...	29 5 17	68 43 10	1600	22 2 04	+2 27·0	+2 31·9	+2 16·9	+1·0	−0·5	−2·4
39 D	53	Bellpat ...	28 59 40	68 0 20	300	31 12 01	+2 22·7	+2 30·4	+2 17·6	+1·1	−0·3	−2·2
	299	Hamidpowhar ...	28 26 0	68 46 50	200	14 2 03	+2 15·9	+2 21·2	+2 5·1	+0·9	−0·6	−2·5
	52	Jhatpat ...	28 22 20	68 19 20	180	28 12 01	+2 4·7	+2 11·7	+1 56·7	+1·0	−0·5	−2·4
	288	Chachar ...	28 12 10	68 9 20	200	10 12 02	+2 11·2	+2 17·3	+2 2·3	+1·0	−0·5	−2·4
39 E	426	Fort Sandeman ...	31 20 40	69 27 10	4600	22 3 04	+3 10·9	+3 16·6	+3 1·0	+1·2	−0·6	−2·4
39 F	427	Musāfirpur ...	30 58 3	69 8 30	4840	25 3 04	+2 59·9	+3 5·6	+2 51·1	+1·2	−0·5	−2·3
	424	Mūsā Khel Bāzār ...	30 52 30	69 48 50	4450	12 3 04	+3 8·1	+3 13·4	+2 56·1	+1·1	−0·8	−2·5
	425	Mekhtar .	30 29 0	69 20 20	4200	16 3 04	+2 56·0	+3 1·3	+2 45·2	+1·1	−0·6	−2·5
	423	Kingri ...	30 26 20	69 49 0	4060	9 3 04	+3 3·5	+3 8·3	+2 50·5	+1·0	−0·8	−2·6
	422	Rakhni ...	30 2 50	69 55 30	3330	6 3 04	+2 57·6	+3 1·9	+2 43·5	+0·9	−0·9	−2·6
39 G	421	Mat ...	29 42 20	69 40 0	3200	1 3 04	+2 50 9	+2 55·3	+2 37·5	+0·9	−0·8	−2·6
	420	Chat ...	29 20 21	69 24 30	2700	27 2 04	+2 40·5	+2 44·9	+2 27·1	+0·9	−0·8	−2·6
	419	Dera Bugti ...	29 2 0	69 9 20	1480	24 2 04	+2 33·5	+2 37·9	+2 21·2	+0·9	−0·7	−2·5
39 H	302	Tuziani ...	28 56 40	69 54 40	350	25 2 03	+2 48·3	+2 53·0	+2 33·5	+0·8	−1·0	−2·7
	301	Bārā ...	28 33 0	69 39 30	300	21 2 03	+2 40·0	+2 44·1	+2 24·6	+0·7	−1·0	−2·7

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
39 H	300	Bela (Taz) ...	28 23 40	69 14 10	230	17 2 03	+2 23·0	+2 27·7	+2 9·9	+0·8	−0·8	−2·6
	26	Reti ...	28 5 10	69 51 20	240	10 2 04	+2 41·6	+2 44·5	+2 23·9	+0·6	−1·1	−2·8
	56	Khairpur Deherki ...	28 2 40	69 41 30	240	8 1 02	+2 33·0	+2 37·9	+2 17·8	+0·7	−1·1	−2·7
39 I	309	Draband ...	31 44 0	70 19 40	780	21 3 03	+3 17·9	+3 24·3	+3 5·9	+1·1	−0·9	−2·6
	308	Gurwāli ...	31 21 50	70 29 0	700	17 3 03	+3 13·4	+3 19·2	+2 59·7	+1·0	−1·0	−2·7
	364	Dorata ...	31 5 10	70 55 30	500	14 4 03	+3 7·7	+3 12·8	+2 51·6	+0·9	−1·2	−2·8
39 J	307	Jhok Bodo ...	30 55 0	70 32 20	680	14 3 03	+3 6·7	+3 12·5	+2 53·0	+1·0	−1·0	−2·7
	363	Daera Dīnpanāh ...	30 34 10	70 55 30	440	13 4 03	+2 48·1	+2 52·7	+2 31·5	+0·8	−1·2	−2·8
	306	Mamdāni ...	30 25 20	70 36 50	600	10 3 03	+2 53·6	+2 58·8	+2 38·2	+0·9	−1·1	−2·8
	305	Vidor ...	30 5 10	70 32 20	500	7 3 03	+2 46·5	+2 51·2	+2 30·6	+0·8	−1·1	−2·8
	362	Ghāzi Ghāt ...	30 4 50	70 51 50	400	11 4 03	+2 46·0	+2 50·6	+2 29·4	+0·8	−1·2	−2·8
39 K	304	Ganehar ...	29 44 0	70 20 20	450	3 3 03	+2 41·9	+2 46·6	+2 26·5	+0·8	−1·1	−2·7
	303	Dirigri ...	29 24 30	70 8 30	450	28 2 03	+2 48·6	+2 53·3	+2 33·8	+0·8	−1·0	−2·7
39 L	58 (*a*)	Khānpur ...	28 38 50	70 39 10	290	14 1 02	+2 16·9	+2 21·1	+1 58·8	+0·6	−1·3	−2·9
	57	Sādikābād ...	28 18 10	70 7 40	270	24 12 02	+2 33·7	+2 37·3	+2 16·1	+0·6	−1·2	−2·8
	244	Maruwala Toba ...	28 15 34	70 38 50	300	19 12 02	+2 11·1	+2 14·1	+1 51·8	+0·5	−1·3	−2·9
	245	Bher Tibba ...	28 0 27	70 22 10	300	22 12 02	+2 18·0	+2 21·0	+1 58·7	+0·5	−1·3	−2·9
39 M	366	Shāh Alam ...	31 58 40	71 9 0	600	19 4 03	+3 17·1	+3 22·8	+3 2·2	+1·0	−1·1	−2·8
	365	Bhakkar ...	31 37 10	71 3 0	560	15 4 03	+3 3·1	+3 8·8	+2 48·2	+1·0	−1·1	−2·8
	322	Nāwankot ...	31 6 30	71 31 0	500	13 5 03	+3 5·6	+3 10·1	+2 47·8	+0·8	−1·3	−2·9
39 N	323	Rangpur ...	30 31 0	71 34 50	450	17 5 03	+3 5·3	+3 9·2	+2 45·8	+0·7	−1·4	−3·0
	76 (*a*)	Multān ...	30 10 50	71 26 50	400	7 12 12	+2 49·7	+2 55·2	+2 31·8	+0·7	−1·4	−3·0
	324	Muzaffargarh ...	30 4 40	71 10 50	380	20 5 03	+2 51·4	+2 55·3	+2 33·0	+0·7	−1·3	−2·9
39 O	77	Gilawāla ...	29 43 6	71 28 20	380	28 2 02	+2 45·6	+2 49·7	+2 25·7	+0·6	−1·5	−3·0
	IV	BAHĀWALPUR ...	29 24 23	71 40 35	380	5 12 19	+2 28·3	+2 52·6	+2 28·1	+0·5	−1·5	−3·1
	37	Samāsata ...	29 21 12	71 32 30	370	17 11 02	+3 1·1	+3 4·2	+2 40·2	+0·5	−1·5	−3·0
	59	Chanigot ...	29 5 11	71 1 30	340	16 1 02	+2 31·4	+2 35·6	+2 12·7	+0·6	−1·4	−2·9
39 P	25	Derāwar Fort ...	28 46 20	71 20 10	350	26 2 02	+2 43·1	+2 45·8	+2 21·8	+0·4	−1·5	−3·0
	24	Khāngarh ...	28 22 10	71 42 50	350	7 12 02	+2 2·4	+2 4·2	+2 38·6	+0·3	−1·6	−3·2
	242	Sarwar ka Toba ...	28 17 34	71 6 40	350	14 12 02	+2 22·7	+2 25·1	+2 1·1	+0·4	−1·5	−3·0
40 A	XXIV	RUK JUNCTION ...	27 48 23	68 38 20	200	8 12 19	+1 46·9	+2 3·4	+1 46·7	+0·8	−0·7	−2·5
	47 (*a*)	Lārkāna ...	27 32 28	68 11 50	200	18 12 01	+1 55·8	+2 2·1	+1 46·0	+0·9	−0·6	−2·5
	45	Khairpur ...	27 31 7	68 44 20	190	29 1 03	+2 1·9	+2 6·6	+1 48·8	+0·8	−0·8	−2·6
40 B	44	Kandiāro Road ..	26 59 20	68 20 50	150	10 12 01	+1 44·3	+1 49·9	+1 32·7	+0·8	−0·7	−2·6
	30	Tujjul ...	26 52 50	68 59 20	200	19 3 02	+2 0·2	+2 4·9	+1 45·4	+0·7	−1·0	−2·7
	43	Daur ...	26 27 40	68 18 30	120	8 12 01	+1 50·0	+1 55·7	+1 37·9	+0·8	−0·8	−2·6
	31	Mubarik Shāh Syud ...	26 23 40	68 56 20	200	24 3 02	+1 54·6	+1 58·7	+1 39·2	+0·6	−1·0	−2·7
	50	Sann ...	26 1 40	68 6 50	100	6 2 03	+1 50·0	+1 54·7	+1 36·9	+0·8	−0·8	−2·6
40 C	42	Shāhdādpur ...	25 55 39	68 37 53	90	5 12 01	+1 47·3	+1 51·5	+1 32 0	+0·6	−1·0	−2·7
	51	Petāro ...	25 32 0	68 19 10	80	26 12 01	+1 44·1	+1 49·0	+1 30·1	+0·7	−0·9	−2·7
	133	Rahoki Junction ...	25 24 30	68 28 0	70	13 2 02	+1 42·9	+1 47·0	+1 27·5	+0·6	−1·0	−2·7
	41	Hyderābād ...	25 22 25	68 22 30	70	23 1 03	+1 44·7	+1 48·9	+1 29·4	+0·7	−1·0	−2·7
	40	Jhimpir ...	25 1 49	68 0 50	100	1 12 01	+1 38·7	+1 43·7	+1 24 8	+0·7	−0·9	−2·7
40 D	914	Talher ...	24 53 0	68 49 0	60	23 11 05	+1 41·5	+1 43·1	+1 22·5	+0·5	−1·1	−2·8
	915	Mīrpur Batoro ...	24 44 10	68 15 20	30	27 11 05	+1 36·2	+1 38·1	+1 18·1	+0·6	−1·0	−2·8
	9	Kirria ...	24 20 0	68 46 40	20	26 11 03	+1 38·6	+1 40·6	+1 18·9	+0·4	−1·2	−2·9
40 E	55	Pano Ākil ...	27 50 50	69 6 50	220	25 11 02	+2 15·0	+2 19·9	+2 1·5	−0·8	−0·9	−2·6
	27	Lūnwara Tur ...	27 44 30	69 38 40	300	7 3 02	+2 27·7	+2 31·8	+2 11·7	+0·6	−1·1	−2·7
	28	Piareh-ka-Toar ...	27 18 20	69 32 20	300	11 3 02	+2 18·7	+2 22·8	+2 2·2	+0·6	−1·1	−2·8
40 F	29	Jussio ...	26 48 40	69 29 20	300	14 3 02	+2 10·2	+2 14·3	+1 53·7	+0·6	−1·1	−2·8
	36	Sumrahu ...	26 29 0	69 59 40	300	11 4 02	+2 4·7	+2 7·4	+1 45·1	+0·4	−1·3	−2·9
	32	Bakār ...	26 5 10	69 9 0	100	27 3 02	+1 55·3	+1 59·4	+1 38·8	+0·6	−1·1	−2·8
40 G	34	Rānāhu ...	25 56 10	69 47 20	250	3 4 02	+2 3·3	+2 6·0	+1 43·7	+0·4	−1·3	−2·9
	33	Khipro ...	25 49 20	69 22 20	50	31 3 02	+1 57·4	+2 0·8	+1 39·6	+0·5	−1·2	−2·8
	XXXI	MIRPUR KHĀS ...	25 31 19	69 1 40	50	19 12 19	+1 33·7	+1 54·2	+1 33·6	+0·5	−1·1	−2·8
	135 (*a*)	Dhoro Naro ...	25 29 51	69 33 50	50	12 2 03	+1 57·9	+2 0·7	+1 38·4	+0·4	−1·3	−2·9
	912	Mithrea ...	25 9 42	70 0 0	300	15 11 05	+1 38·0	+1 38 6	+1 14·6	+0·2	−1·5	−3·0
	913	Pireh Kolachi ...	25 1 27	69 26 20	40	19 11 05	+2 5·0	+2 5·9	+1 43·6	+0·3	−1·3	−2·9
40 H	7 (*a*)	Diplo ...	24 28 0	69 34 30	20	20 11 03	+2 0·5	+2 1·5	+1 38·1	+0·2	−1·4	−3·0
	8	Rahim-ki-Bāzār ...	24 19 0	69 9 0	10	24 11 03	+1 50·3	+1 51·8	+1 29·0	+0·3	−1·3	−3·0
40 I	243	Islāmgarh ...	27 51 30	70 48 40	400	16 12 02	+2 7·4	+2 9·8	+1 46·4	+0·4	−1·4	−3·0
	416	Kalu ...	27 25 7	70 17 28	400	6 2 04	+2 9·2	+2 11·7	+1 49·4	+0·5	−1·3	−2·9
40 J	410	Ravilahu ...	26 52 35	70 2 20	300	19 1 04	+2 8·8	+2 11·3	+1 49·0	+0·5	−1·3	−2·9
	411	Khubha ...	26 49 8	70 40 9	500	22 1 04	+2 8·0	+2 9·5	+1 45·5	+0·3	−1·5	−3·0

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES		
										1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
40 J	409	Jejrawa ...	26 15 23	70 38 51	400	15 1 04	+2 0·5	+2 1·5	+1 37·0	+0·2	−1·5	−3·1
	35	Nasīr Aresur ...	26 9 20	70 7 30	300	7 4 02	+1 54·3	+1 56·3	+1 32·9	+0·3	−1·4	−3·0
40 K	262	Jaisingder ...	25 45 41	70 24 30	300	9 2 03	+1 48·0	+1 49·2	+1 24·7	+0·2	−1·5	−3·1
	261	Bhachbhar ...	25 44 0	70 59 0	700	8 2 03	+2 23·4	+2 23·4	+1 57·2	0	−1·7	−3·2
	911	Khisar ...	25 21 49	70 28 40	400	11 11 05	+1 37·0	+1 37·3	+1 12·2	+0·1	−1·6	−3·1
40 L	4 (*a*)	Sheria Bheel ...	24 43 50	70 52 50	200	13 11 03	+1 44·9	+1 44·4	+1 17·7	−0·1	−1·7	−3·3
	6 (*a*)	Islamkot ...	24 42 10	70 9 50	200	17 11 03	+1 19·1	+1 19·6	+0 55·1	+0·1	−1·5	−3·1
	5	Tūr Lūnian ...	24 39 0	70 31 40	200	15 11 03	+2 15·8	+2 15·8	+1 50·2	0	−1·6	−3·2
40 M	241	Lohita Tibba ...	27 55 5	71 32 10	400	10 12 02	+1 49·6	+1 50·8	+1 25·2	+0·2	−1·6	−3·2
	414	Satiaya ...	27 25 15	71 39 9	400	31 1 04	+2 41·6	+2 42·1	+2 15·4	+0·1	−1·7	−3·3
	415	Dīga ...	27 24 15	71 0 2	400	3 2 04	+2 21·0	+2 22·5	+1 58·0	+0·3	−1·5	−3·1
40 N	413	Hurdīkot ...	26 57 25	71 51 0	700	11 1 09	+3 6·1	+3 6·1	+2 38·3	0	−1·8	−3·4
	412	Kakrasar ...	26 55 36	71 12 10	750	25 1 04	+2 22·4	+2 23·4	+1 57·8	+0·2	−1·6	−3·2
	407	Wallār ...	26 29 11	71 48 42	800	9 1 04	+2 20·1	+2 20·1	+1 52·3	0	−1·8	−3·4
	408	Mandai G.T.S. ...	26 21 10	71 10 40	1110	12 1 04	+1 51·6	+1 52·1	+1 25·0	+0·1	−1·7	−3·2
40 O	260	Kavas ...	25 52 17	71 31 40	500	7 3 10	+2 5·9	+2 8·0	+1 40·2	−0·1	−1·8	−3·4
	LXXIII	BĀRMER ...	25 44 35	71 26 40	650	2 2 20	+1 25·4	+1 53·5	+1 25·7	−0·1	−1·8	−3·4
	406	Mondawla G.T.S. ...	25 24 47	71 52 10	370	3 1 04	+1 58·2	+1 57·2	+1 28·3	−0·2	−1·9	−3·5
	910	Kunra ...	25 22 30	71 2 40	700	7 11 05	+1 53·7	+1 53·7	+1 27·0	0	−1·7	−3·3
40 P	3	Dutwa ...	24 52 50	71 28 50	100	10 11 03	+1 57·3	+1 56·3	+1 27·9	−0·2	−1·9	−3·4
	2	Sāchor ...	24 45 20	71 45 50	200	7 11 03	+1 40·0	+1 38·5	+1 9·0	−0·3	−2·0	−3·5
	1	Pāvdasān ...	24 29 20	71 53 50	350	6 11 03	+1 10·3	+1 8·2	+0 38·2	−0·4	−2·0	−3·6
	923	Suigām ...	24 9 10	71 21 10	50	9 1 06	+1 3·2	+1 2·3	+0 33·4	−0·3	−1·9	−3·5
	18	Diodar ...	24 6 30	71 46 10	200	22 12 03	+1 26·7	+1 24·7	+0 54·7	−0·4	−2·0	−3·6
41 A	10 (*a*)	Lakhpat ...	23 49 20	68 46 50	50	1 12 03	+1 44·5	+1 46·0	+1 23·8	+0·3	−1·2	−3·0
	11 (*a*)	Murr ...	23 33 20	68 56 40	300	5 12 03	+1 59·6	+2 0·6	+1 37·8	+0·2	−1·3	−3·0
	919	Jakhau ...	23 13 10	68 43 10	50	16 12 05	+1 29·9	+1 30·5	+1 7·7	+0·2	−1·3	−3·0
41 B	926	Dwārkā ...	22 14 40	68 57 10	30	28 1 06	+1 40·8	+1 40·8	+1 16·4	0	−1·4	−3·2
41 E	920	Banri ...	23 44 47	69 29 35	50	21 12 05	+1 38·8	+1 39·1	+1 15·2	+0·1	−1·4	−3·1
	12 (*a*)	Nakhtarāna ...	23 20 50	69 15 10	400	7 12 03	+1 37·4	+1 37·9	+1 14·0	+0·1	−1·4	−3·1
	13	Kalyānpur ...	23 13 40	69 35 40	400	9 12 03	+1 14·3	+1 14·3	+0 49·3	0	−1·5	−3·2
41 F	918	Mandvi (Cutch) ...	22 49 30	69 22 0	20	12 12 05	+1 45·9	+1 45·9	+1 20·9	0	−1·5	−3·2
	925	Salāya ...	22 18 10	69 36 20	30	24 1 06	+1 36·4	+1 35·8	+1 9·7	−0·2	−1·6	−3·3
41 G	IX	PORBANDAR ...	21 37 43	69 36 39	30	26 12 19	+0 45·8	+1 12·9	+0 45·7	−0·3	−1·7	−3·4
41 I	922	Lodrāni ...	23 53 50	70 37 30	100	2 1 06	+1 35·5	+1 34·9	+1 8·2	−0·2	−1·7	−3·3
	921	Trangeribet ...	23 51 20	70 4 20	10	28 12 05	+0 56·3	+0 56·3	+0 30·7	0	−1·6	−3·2
	16 (*a*)	Ādesar ...	23 33 30	70 59 10	70	17 12 03	+1 16·0	+1 14·5	+0 46·1	−0·3	−1·9	−3·4
	15 (*a*)	Lākadiya ...	23 20 30	70 34 40	200	14 12 03	+1 2·8	+1 1·3	+0 33·5	−0·3	−1·8	−3·4
	14	Bhīmasar ...	23 11 20	70 9 50	90	12 12 03	+1 3·0	+1 2·0	+0 35·3	−0·2	−1·7	−3·3
41 J	142 (*a*)	Morvi ...	22 49 20	70 50 50	150	8 3 02	+0 44·1	+0 41·4	+0 12·5	−0·4	−1·9	−3·5
	145	Jāmnagar ...	22 28 30	70 4 20	60	14 3 02	+1 17·5	+1 15·5	+0 48·3	−0·3	−1·7	−3·4
	143	Rājkot ...	22 18 20	70 48 40	400	28 2 10	+0 30·0	+0 32·3	+0 2·8	−0·5	−2·0	−3·5
	924	Kālāvad ...	22 12 20	70 22 50	300	18 1 06	+0 54·1	+0 52·9	+0 24·6	−0·4	−1·8	−3·5
41 K	150	Jām Jodhpur ...	21 54 10	70 1 50	300	29 3 02	+2 3·0	+2 0·3	+1 32·5	−0·4	−1·8	−3·4
	144	Virpur ...	21 51 0	70 42 20	400	11 3 02	+1 10·7	+1 6·6	+0 37·1	−0·6	−2·0	−3·5
	146	Junagad ...	21 31 50	70 27 0	200	17 3 02	+1 18·1	+1 14·0	+0 45·1	−0·6	−1·9	−3·5
	927	Gigasaran ...	21 17 0	70 57 10	800	6 2 06	+0 49·0	+0 47·0	+0 16·4	−0·7	−2·1	−3·6
41 L	147	Verāval ...	20 54 20	7 22 30	70	13 1 13	+0 54·2	+1 2·3	+0 32·3	−0·6	−2·0	−3·6
41 M	17	Vārāhi ...	23 47 50	71 26 20	40	19 12 03	+1 22·9	+1 20·9	+0 51·4	−0·4	−2·0	−3·5
	140 (*a*)	Dhrāngadhra ...	23 0 0	71 28 40	150	4 3 02	+1 11·3	+1 7·2	+0 36·6	−0·6	−2·1	−3·6
41 N	138 (*a*)	Limbdi ...	22 34 0	71 48 0	150	27 2 02	+1 13·5	+1 8·7	+0 37·0	−0·7	−2·2	−3·7
	141	Dolia ...	22 31 20	71 21 50	400	6 3 02	+1 14·4	+1 10·3	+0 39·7	−0·6	−2·1	−3·6
	137	Ningāla ...	22 1 30	71 42 20	200	25 2 02	+1 7·6	+1 2·1	+0 29·8	−0·8	−2·3	−3·7
41 O	149	Chital ...	21 44 40	71 12 40	500	27 3 02	+0 40·9	+0 36·2	+0 5·0	−0·7	−2·2	−3·6
	928	Ghoba ...	21 25 40	71 34 20	200	10 2 06	+0 40·9	+0 38·6	+0 6·3	−0·8	−2·3	−3·7
	690	Mahuva Bandar ...	21 2 20	71 46 30	50	13 4 05	+0 32·4	+0 29·1	−0 4·9	−0·9	−2·5	−3·8
41 P	691	Jāfarābād ...	20 51 50	71 22 10	50	15 4 05	+1 16·4	+1 13·1	+0 40·2	−0·9	−2·4	−3·7
43 B	86	Rashkai ...	34 7 0	72 1 20	980	22 3 02	+3 44·7	+3 54·2	+3 33·6	+1·4	−1·1	−2·8
43 C	85	Khairābād ...	33 54 10	72 13 10	990	20 11 12	+3 45·6	+3 50·3	+3 28·6	+1·3	−1·2	−2·9
	84	Sarai Kāla ...	33 44 40	72 49 10	1690	18 3 02	+3 40·7	+3 48·8	+3 25·4	+1·2	−1·4	−3·0
	90	Fatehjang ...	33 34 20	72 38 30	1700	31 3 02	+3 39·1	+3 47·2	+3 24·4	+1·2	−1·3	−3·0

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
43 C	89	Jand ...	33 26 20	72 0 50	1170	24 11 12	+3 36·4	+3 41·1	+3 18·9	+1·2	−1·2	−3·0
43 D	319	Chakwāl ...	32 56 10	72 51 10	1710	29 4 03	+3 27·0	+3 32·7	+3 8·2	+1·0	−1·5	−3·1
	318	Talagang ...	32 55 50	72 25 0	1500	26 4 03	+3 26·1	+3 32·4	+3 9·0	+1·1	−1 4	−3·0
	94	Lilla ...	32 33 0	72 44 40	670	10 4 02	+3 31·9	+3 38·0	+3 13·5	+0·9	−1·5	−3·1
	96	Bhera ...	32 29 20	72 55 20	600	15 4 02	+3 8·6	+3 14·6	+2 49·0	·0·9	−1·6	−3·2
	93(*a*)	Hadāli ...	32 18 40	72 10 10	610	9 4 02	+3 26·6	+3 33·3	+3 9·9	+1·0	−1·4	−3·0
	1399	Sargodha ...	32 6 0	72 38 30	610	30 11 12	+3 10·1	+3 16·0	+2 51·5	+0·8	−1·5	−3·1
43 F	1342	Muzaffarābād ...	34 22 10	73 27 40	2400	5 4 11	+3 51·1	+3 54·3	+3 29·9	+1·2	−1·4	−3·2
43 G	1341	Murree ...	33 55 10	73 23 20	6300	30 3 11	+3 45·7	+3 49·1	+3 24·1	+1·1	−1·5	−3·2
	V	RĀWALPINDI ..	33 35 25	73 3 6	1700	23 11 19	+3 18·3	+3 41·9	+3 18·0	+1·1	−1·5	−3·1
	83	Mankiala ...	33 29 0	73 14 40	1760	14 3 02	+3 38·3	+3 45·8	+3 20·8	+1·1	−1·5	−3·2
	1340	Behari ...	33 23 20	73 43 50	1660	21 3 11	+3 37·6	+3 41·2	+3 15·1	+1·0	−1·6	−3·3
	82	Domeli ...	33 2 6	73 28 0	1190	13 3 02	+3 27·1	+3 33·2	+3 7·1	+0·9	−1·6	−3·3
43 H	81	Lāla Mūsa ...	32 42 40	73 57 0	830	29 3 10	+3 22·9	+3 25·0	+2 57·8	+0·7	−1·7	−3·4
	95	Khewra ...	32 38 0	73 0 10	800	28 11 12	+3 3·4	+3 9·7	+2 44·1	+0·9	−1·6	−3·2
	97	Hariah ...	32 34 30	73 19 30	750	17 4 02	+3 9·8	+3 15·2	+2 49·1	+0·8	−1·6	−3·3
43 J	1345	Gurais ...	34 38 0	74 51 50	7940	27 4 11	+3 55·9	+3 59·6	+3 32·5	+1·1	−1·6	−3·5
	1344	Shalura ...	34 29 30	74 7 40	5900	17 4 11	+3 56·3	+3 59·8	+3 34·3	+1·2	−1·5	−3·3
	1343	Uri ...	34 5 0	74 2 50	4450	11 4 11	+3 53·5	+3 57·2	+3 31·1	+1·1	−1·6	−3·3
	1256(*a*)	Srīnagar ...	34 3 50	74 50 30	5200	13 5 11	+3 47·0	+3 51·0	+3 23·3	+0·9	−1·7	−3·5
43 K	1346	Hirpur ...	33 40 50	74 43 0	7540	19 5 11	+3 27·1	+3 31·2	+3 3·5	+0·9	−1·7	−3·5
	1354	Thana Mandi ...	33 32 40	74 22 0	4930	24 6 11	+3 46·2	+3 50·4	+3 23·2	+0·9	−1·7	−3·4
	1355	Changassarai ...	33 14 40	74 15 50	2350	28 6 11	+3 19·3	+3 23·5	+2 56·3	+0·8	−1·7	−3·4
	1353	Poni ...	33 4 50	74 41 50	2000	17 6 11	+3 45·8	+3 50·2	+3 21·4	+0·7	−1·8	−3·6
43 L	1356	Bhimbar ...	32 58 20	74 4 50	1100	2 7 11	+3 26·0	+3 30·3	+3 3·1	+0·8	−1·7	−3·4
	80	Jammu ...	32 43 0	74 51 20	1000	8 3 02	+3 25·8	+3 29·2	+2 59·8	+0·5	−1·9	−3·6
	79	Sambriāl ...	32 28 10	74 21 20	800	6 3 02	+3 15·7	+3 19·8	+2 51·5	+0·6	−1·8	−3·5
	1339	Dhoda ...	32 9 50	74 41 50	800	6 3 11	+3 9·1	+3 13·2	+2 43·8	+0·4	−1·9	−3·6
	78	Gujrānwāla ...	32 9 40	74 12 0	750	4 3 02	+3 6·1	+3 9·5	+2 41·2	+0·5	−1·8	−3·5
43 N	1257(*a*)	Sonamarg ...	34 18 30	75 18 30	8750	8 5 11	+3 51·3	+3 55·5	+3 26·7	+0·9	−1·8	−3·6
43 O	1348	Inshin ...	33 48 30	75 33 40	8000	27 5 11	+3 45·7	+3 50·3	+3 20·4	+0·7	−1·9	−3·7
	1347	Islāmābād ...	33 43 50	75 8 50	5240	22 5 11	+3 39·4	+3 43·7	+3 14·9	+0·8	−1·8	−3·6
	1349	Sof ...	33 37 0	75 17 40	6200	30 5 11	+3 37·7	+3 43·1	+3 12·8	+0·7	−1·8	−3·7
	1350	Banihal ...	33 26 20	75 12 0	5500	2 6 11	+3 41·6	+3 46·0	+3 17·2	+0·7	−1·8	−3·6
	1351	Ramban ...	33 13 30	75 14 40	2000	7 6 11	+3 38·5	+3 43·1	+3 13·2	+0·6	−1·9	−3·7
43 P	1352	Udampur ...	32 55 20	75 7 30	2400	12 6 11	+3 34·5	+3 39·2	+3 9·3	+0·6	−1·9	−3·7
	100	Pathānkot ...	32 16 30	75 38 40	1080	13 11 12	+3 18·8	+3 26·9	+2 54·8	+0·2	−2·1	−3·9
44 A	1400	Sillanwali ...	31 49 35	72 30 40	600	2 12 12	+3 11·4	+3 17·3	+2 52·8	+0·8	−1·5	−3·1
	320	Khair Kulan ...	31 46 50	72 11 0	570	7 5 03	+3 0·6	+3 5·7	+2 41·7	+0·9	−1·5	−3·0
	1401	Jhang (Maghiāna) ...	31 15 30	72 19 30	510	4 12 12	+2 57·5	+3 3·8	+2 38·7	+0·7	−1·6	−3·1
	321	Athārānhazāri ...	31 10 30	72 5 40	480	10 5 03	+2 40·9	+2 44·8	+2 20·8	+0·7	−1·5	−3·0
	369	Gojra ...	31 8 39	72 40 30	500	26 4 03	+3 0·7	+3 4·1	+2 37·9	+0·6	−1·7	−3·2
44 B	370	Darkhana ..	30 39 50	72 11 10	460	29 4 03	+2 44·4	+2 47·8	+2 22·7	+0·6	−1·6	−3·1
	74	Chīchawatni ...	30 32 10	72 41 50	550	22 2 02	+2 49·4	+2 52·8	+2 26·1	+0·5	−1·7	−3·3
	75	Kacha Khuh ..	30 22 40	72 9 10	450	24 2 02	+2 35·8	+2 39·9	+2 14·8	+0·6	−1·6	−3·1
44 C	61	Bakhshan Khan ...	29 44 30	72 42 50	480	20 1 02	+2 34·6	+2 36·7	+2 8·9	+0·3	−1·8	−3·4
	60	Asrani ...	29 31 30	72 8 10	460	18 1 02	+2 38·3	+2 41·1	+2 14·9	+0·4	−1·7	−3·2
	239	Mojgarh ...	29 0 50	72 8 20	400	2 12 02	+2 11·4	+2 13·2	+1 46·5	+0·3	−1·7	−3·3
44 D	238	Ranabhana Toba ...	28 54 31	72 38 10	450	28 11 02	+1 57·0	+1 58·2	+1 29·8	+0·2	−1·9	−3·4
	240	Kumhāriwala ...	28 31 57	72 14 10	420	4 12 02	+3 1·9	+3 3·1	+2 35·8	+0·2	−1·8	−3·3
	250	Pungāl ...	28 30 50	72 48 40	500	10 1 03	+2 5·9	+2 6·5	+1 37·6	+0·1	−1·9	−3·5
	251	Angnao ...	28 6 0	72 47 0	600	14 1 03	+2 20·7	+2 20·7	+1 51·2	0	−2·0	−3·5
	23	Ranjitpura ...	28 1 0	72 7 20	480	20 2 02	+2 15·5	+2 16·2	+1 48·4	+0·1	−1·8	−3·4
44 E	367	Kaleke ...	31 58 20	73 36 20	700	22 4 03	+3 13·2	+3 16·6	+2 49·4	+0·6	−1·7	−3·4
	368	Chiniot Road ...	31 34 20	73 10 40	600	24 4 03	+2 55·0	+2 58·4	+2 31·7	+0·6	−1·7	−3·3
	72	Chānga Mānga ...	31 5 30	73 56 30	650	19 2 02	+2 55·8	+2 57·9	+2 28·5	+0·3	−1·9	−3·6
44 F	73	Gāmbar ...	30 45 19	73 19 50	600	20 2 02	+2 53·1	+2 55·8	+2 28·0	+0·4	−1·8	−3·4
	63(*a*)	Orki (Sujawalpur) ...	30 8 40	73 54 30	600	27 1 02	+2 57·8	+2 58·5	+2 27·9	+0·1	−2·1	−3·6
	62	Rojhanwāli ...	30 0 50	73 15 40	500	12 4 10	+2 37·8	+2 40·2	+2 11·3	+0·2	−1·9	−3·5
44 G	246	Ganeshgarh ...	29 45 0	73 54 0	600	28 12 02	+2 49·1	+2 49·1	+2 18·0	0	−2·1	−3·7
	247	Lalgarh ...	29 38 21	73 22 50	530	30 12 02	+2 34·8	+2 35·4	+2 5 9	+0·1	−2·0	−3·5
	127	Sūratgarh ...	29 19 30	73 54 30	560	30 12 12	+2 22·2	+2 31·0	+1 59·3	−0·1	−2·2	−3·7
	237	Walar ...	29 15 30	73 1 40	500	25 11 02	+2 21·9	+2 22·5	+1 53·6	+0·1	−1·9	−3·5
	236	Balochia ...	29 14 50	73 27 20	550	22 11 02	+2 30·4	+2 30·4	+2 0·4	0	−2·0	−3·6

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
44 H	248	Gegra ...	28 49 10	73 15 0	600	5 1 03	+2 29·3	+2 29·3	+1 58·7	0	−2·1	−3·6
	126	Mahajan ...	28 47 40	73 50 40	640	24 1 02	+2 22·6	+2 21·9	+1 49·6	−0·1	−2·3	−3·7
	249	Kālasar ...	28 28 0	73 15 20	700	7 1 03	+2 20·0	+2 20·0	+1 49·4	0	−2·1	−3·6
	125	Dulmera ...	28 24 20	73 39 20	660	22 1 02	+2 13·1	+2 11·7	+1 40·0	−0·2	−2·2	−3·7
	XXIX	BIKANER ...	28 0 40	73 18 50	750	30 1 20	+1 32·7	+2 4·2	+1 33·0	−0·1	−2·2	−3·6
44 I	98	Amritsar ...	31 38 10	74 51 30	750	10 4 08	+2 55·9	+2 56·0	+2 25·5	+0·2	−2·0	−3·7
	XXV	LAHORE ...	31 35 50	74 18 50	700	19 11 19	+2 28·8	+2 57·8	+2 28·4	+0·4	−1·9	−3·6
44 J	434	Ferozepore ...	30 57 52	74 36 10	650	19 4 04	+2 29·9	+2 30·4	+1 59·3	+0·1	−2·1	−3·7
	64	Malout ...	30 11 0	74 29 40	650	10 11 02	+2 44·0	+2 44·0	+2 11·8	0	−2·2	−3·8
44 K	235	Sangaria ...	29 47 50	74 27 40	620	17 11 02	+2 24·7	+2 24·1	+1 51·3	−0·1	−2·3	−3·8
	267	Mirjawali ...	29 20 40	74 30 20	600	11 3 03	+2 24·1	+2 22·9	+1 49·5	−0·2	−2·4	−3·8
44 L	266	Saringsar ...	28 54 40	74 28 30	700	26 2 03	+2 25·3	+2 23·5	+1 49·6	−0·3	−2·4	−3·9
	265	Sardārshahr ..	28 26 10	74 28 50	900	23 2 03	+2 28·9	+2 27·1	+1 52·6	−0·3	−2·5	−3·9
	271	Fatehpur ..	28 0 30	74 57 20	1100	13 3 03	+1 57·9	+1 55·0	+1 18·8	−0·5	−2·7	−4·0
44 M	99	Dhārīwal ...	31 57 10	75 18 50	850	22 4 02	+2 42·5	+2 43·8	+2 12·2	+0·2	−2·1	−3·8
	1303	Hoshiārpur ...	31 31 50	75 54 20	1100	8 4 10	+3 1·1	+3 4·0	+2 30·2	0	−2·3	−4·0
	70	Kartārpur ...	31 26 10	75 29 30	780	12 2 02	+2 58·1	+2 58·1	+2 24·8	0	−2·3	−3·9
44 N	69	Ladhowāl ...	30 59 0	75 47 20	800	24 4 04	+2 54·4	+2 53·5	+2 19·1	−0·2	−2·4	−4·0
	435	Moga ...	30 49 40	75 10 30	720	22 4 04	+2 51·5	+2 51·5	+2 18·2	0	−2·3	−3·9
	66	Alāl ..	30 21 46	75 43 50	750	1 2 02	+2 44·8	+2 42·7	+2 7·2	−0·3	−2·5	−4·1
	65	Bhuchchu ...	30 12 47	75 5 30	700	31 1 02	+2 37·5	+2 36·1	+2 2·2	−0·2	−2·4	−3·9
44 O	284	Budhlāda ...	29 55 30	75 33 20	750	16 4 03	+2 33·6	+2 31·9	+1 55·8	−0·3	−2·6	−4·1
	XLIII	SIRSA ...	29 32 10	75 2 40	700	26 1 20	+2 3·5	+2 39·3	+2 3·8	−0·3	−2·5	−4·0
	282	Adampur ...	29 17 20	75 27 50	700	12 4 03	+2 19·0	+2 17·6	+1 40·9	−0·4	−2·7	−4·1
	281	Hānsi ...	29 5 40	75 57 0	700	9 4 03	+2 26·7	+2 23·3	+1 45·5	−0·6	−2·8	−4·2
44 P	268	Malsisar ...	28 58 20	75 1 30	700	3 3 03	+2 28·2	+2 25·9	+1 50·3	−0·4	−2·6	−4·0
	269	Sūrpura ...	28 40 17	75 37 0	750	7 3 03	+2 22·3	+2 18·8	+1 41·0	−0·6	−2·8	−4·2
	270	Tamkor ..	28 26 20	75 15 10	900	9 3 03	+2 20·5	+2 17·6	+1 40·9	−0·5	−2·7	−4·1
	275	Koharwas ...	28 15 40	75 57 30	1000	25 3 03	+2 22·4	+2 17·8	+1 38·9	−0·8	−2·9	−4·3
45 A	252	Hodda ...	27 37 50	72 52 30	900	16 1 03	+2 1·3	+2 0·7	+1 30·7	−0·1	−2·0	−3·6
	22	Nokh ...	27 33 30	72 15 20	580	17 2 02	+2 14·0	+2 14·0	+1 45·6	0	−1·9	−3·4
	253	Ranisar ...	27 12 40	72 42 40	880	20 1 03	+2 4·8	+2 4·2	+1 34·2	−0·1	−2·0	−3·6
	21 (*a*)	Phalodi ...	27 7 30	72 21 20	790	23 1 09	+2 1·3	+2 1·4	+1 32·5	−0·1	−1·9	−3·5
45 B	20	Asolai ...	26 42 10	72 15 50	900	27 11 08	+0 12·9	+0 12·8	−0 16·1	−0·1	−1·9	−3·5
	255	Khethasar ...	26 41 0	72 49 20	900	26 1 03	+1 50·1	+1 48·3	+1 17·7	−0·3	−2·1	−3·6
	19 (*a*)	Sai ...	26 16 50	72 16 20	850	4 2 02	+2 4·9	+2 3·5	+1 34·0	−0·2	−2·0	−3·5
45 C	258	Dundāra ...	25 53 40	72 47 50	540	2 2 03	+1 30·0	+1 27·6	+0 55·9	−0·4	−2·2	−3·7
	259	Bālotra ...	25 50 10	72 14 40	360	5 2 03	+1 26·7	+1 24·9	+0 54·9	−0·3	−2·0	−3·6
	405	Jalar ...	25 21 10	72 36 50	530	31 12 03	+1 18·3	+1 16·3	+0 44·6	−0·4	−2·2	−3·7
45 D	404	Lohana ...	24 47 20	72 27 10	900	28 12 03	+1 37·1	+1 34·6	+1 2·9	−0·5	−2·2	−3·7
	148	Abu Road ...	24 29 0	72 46 40	860	4 3 10	+1 25·9	+1 28·6	+0 56·3	−0·6	−2·3	−3·7
	118	Roho ...	24 24 20	72 38 20	740	6 1 02	+1 26·9	+1 22·7	+0 50·4	−0·6	−2·3	−3·7
	117	Deesa ...	24 14 30	72 10 40	450	4 1 02	+1 20·8	+1 17·3	+0 46·1	−0·5	−2·2	−3·6
45 E	123	Bikasar ...	27 34 20	73 28 0	1040	18 1 02	+1 57·1	+1 55·0	+1 22·7	−0·3	−2·3	−3·7
	254	Panchora ...	27 6 40	73 13 30	1100	23 1 03	+1 23·0	+1 21·2	+0 49·5	−0·3	−2·2	−3·7
	122	Mūndwa ...	27 3 50	73 48 30	1090	16 1 02	+1 57·9	+1 55·1	+1 21·7	−0·4	−2·4	−3·8
45 F	121	Khāngta ..	26 33 30	73 37 20	980	27 12 12	+1 46·4	+1 56·0	+1 22·6	−0·5	−2·4	−3·8
	256	Jodhpur ...	26 16 20	73 1 30	780	28 1 03	+1 24·0	+1 21·6	+0 49·9	−0·4	−2·2	−3·7
45 G	132	Sojat Road ...	25 52 0	73 45 10	1000	8 2 02	+1 46·1	+1 42·0	+1 7·5	−0·6	−2·5	−3·9
	257	Marwar Pāli ...	25 47 50	73 19 30	720	1 2 03	+1 38·0	+1 35·0	+1 1·6	−0·5	−2·4	−3·8
	120	Rāni ...	25 21 10	73 18 20	920	10 1 02	+1 29·7	+1 25·5	+0 52·1	−0·6	−2·4	−3·8
	633	Lāwa ...	25 14 10	73 59 30	1800	25 2 05	+1 51·9	+1 48·8	+1 13·7	−0·8	−2·6	−3·9
45 H	119(*a*)	Pindwāra ...	24 48 0	73 2 10	1220	2 1 12	+1 23·6	+1 33·2	+0 59·8	−0·6	−2·4	−3·8
	1	UDAIPUR ...	24 34 42	73 42 46	1900	9 2 20	+0 49·5	+1 25·0	+0 49·9	−0·8	−2·6	−3·9
	634	Bichabhera ...	24 16 20	73 22 50	1650	4 3 05	+1 16·9	+1 13·8	+0 39·3	−0·8	−2·5	−3·9
45 I	264	Bana ...	27 58 40	74 1 50	990	20 2 03	+2 10·8	+2 9·0	+1 35·6	−0·3	−2·4	−3·8
	272	Singrawat ...	27 26 10	74 52 50	1300	15 3 03	+1 54·1	+1 50·6	+1 14·4	−0·6	−2·7	−4·0
	263	Dugoli ...	27 22 0	74 10 20	1000	17 2 03	+2 8·9	+2 6·0	+1 31·5	−0·5	−2·5	−3·9
45 J	128	Gachhipura ...	26 57 20	74 27 50	1100	29 1 02	+2 1·5	+1 57·3	+1 21·1	−0·6	−2·7	−4·0
	XXX	AJMER ...	26 27 30	74 38 30	1600	6 2 20	+1 24·0	+2 1·2	+1 24·4	−0·8	−2·8	−4·0
	131(*a*)	Beāwar ...	26 26 40	74 18 30	1400	7 2 02	+1 51·1	+1 46·3	+1 10·1	−0·7	−2·7	−4·0
45 K	160	Māndal ...	25 26 50	74 35 10	1450	12 2 13	+2 13·6	+2 25·1	+1 47·8	−0·9	−2·8	−4·1

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
45 L	159	Kapasin ...	24 51 30	74 18 40	1500	14 4 02	+1 52·6	+1 46·6	+1 10·4	−0·9	−2·7	−4·0
	158	Nīmbahera ...	24 37 20	74 41 40	1500	7 3 09	+1 37·1	+1 37·6	+0 59·7	−1·1	−2·9	−4·1
	640	Kānor ...	24 26 0	74 16 10	1630	25 3 05	+1 38·9	+1 35·1	+0 58·3	−1·0	−2·8	−4·0
45 M	274	Gūdha ...	27 51 40	75 31 40	1700	23 3 03	+2 13·1	+2 9·1	+1 30·7	−0·7	−2·9	−4·2
	277	Shahpura ...	27 23 30	75 58 0	1700	31 3 03	+1 54·6	+1 49·4	+1 9·9	−0·9	−3·0	−4·3
	273	Khatu ...	27 22 10	75 24 10	1500	19 3 03	+2 7·7	+2 3·1	+1 24·7	−0·8	−2·9	−4·2
45 N	162	Jaipur ...	26 55 0	75 47 0	1300	2 4 03	+2 5·8	+2 0·0	+1 20·5	−1·0	−3·0	−4·3
	129	Sāmbhar ...	26 54 20	75 11 10	1200	1 2 02	+2 17·9	+2 12·4	+1 34·5	−0·8	−2·9	−4·1
	161	Naraina ...	26 47 30	75 11 50	1200	17 4 02	+1 56·5	+1 51·1	+1 13·2	−0·8	−2·9	−4·1
	608	Jhalāi ...	26 21 30	75 59 50	1000	23 11 04	+2 2·8	+1 58·3	+1 17·7	−1·1	−3·1	−4·4
	609	Mālpura ...	26 17 0	75 22 10	1100	26 11 04	+1 48·2	+1 44·1	+1 5·1	−1·0	−3·0	−4·2
45 O	610	Awan ...	25 48 0	75 36 20	1050	29 11 04	+1 55·5	+1 51·0	+1 11·5	−1·1	−3·0	−4·3
	612	Kotah ...	25 11 30	75 51 40	860	5 4 10	+1 33·2	+1 37·1	+0 57·0	−1·3	−3·1	−4·3
45 P	613	Singoli ...	24 58 10	75 17 20	1200	10 12 04	+1 40·2	+1 35·3	+0 56·3	−1·2	−3·0	−4·2
	614	Rāmpura ...	24 27 40	75 26 40	1400	13 12 04	+1 32·0	+1 26·7	+0 46·6	−1·3	−3·1	−4·3
	157	(Panth) Pīplia ...	24 12 20	75 0 40	1500	15 2 09	+1 19·3	+1 19·7	+0 40·7	−1·2	−3·0	−4·2
	616	Kundio ...	24 2 0	75 53 30	1600	20 12 04	+1 39·0	+1 33·4	+0 52·2	−1·4	−3·2	−4·4
46 A	116(*a*)	Kherālu ...	23 52 40	72 37 20	550	2 1 02	+1 19·9	+1 15·0	+0 42·7	−0·7	−2·3	−3·7
	115	Pātan ...	23 51 0	72 8 10	260	27 12 01	+0 46·5	+0 42·3	+0 11·1	−0·6	−2·2	−3·6
	114	Jagudan ...	23 30 50	72 24 0	290	5 1 13	+1 5·8	+1 1·5·0	+0 42·7	−0·7	−2·3	−3·7
	113	Parāntīj ...	23 25 40	72 51 50	370	21 12 01	+1 31·2	+1 25·6	+0 51·6	−0·8	−2·5	−3·8
	XXXII	VIRAMGĀM ...	23 8 10	72 3 30	90	23 12 19	+0 38·0	+1 9·6	+0 37·9	−0·7	−2·2	−3·7
46 B	112	Bārejadi ...	22 53 40	72 40 20	120	19 12 01	+1 2·6	+0 56·3	+0 22·3	−0·9	−2·5	−3·8
	111	Cambay ...	22 19 20	72 38 0	40	18 12 01	+1 8·2	+1 1·9	+0 27·9	−0·9	−2·5	−3·8
46 C	136	Bhāvnagar ...	21 46 40	72 7 40	20	15 1 13	+0 8·9	+0 19·0	−0 15·0	−0·9	−2·5	−3·8
	XXVIII	SACHĪN ...	21 4 40	72 52 40	40	30 12 19	−0 7·6	+0 29·3	−0 7·6	−1·2	−2·8	−4·0
46 D	104	Pārdi ...	20 31 0	72 55 40	50	30 11 01	+1 46·9	+1 37·7	+1 0 3	−1·3	−2·9	−4·0
46 E	635	Dhandolia ...	23 42 10	73 19 50	700	8 3 05	+1 13·1	+1 9·7	+0 34·6	−0·9	−2·6	−3·9
	637	Ghatanogam ...	23 35 30	73 53 50	600	14 3 05	+1 24·3	+1 20·5	+0 44 3	−1·0	−2·7	−4·0
	636	Debhari ...	23 15 20	73 30 10	360	11 3 05	+1 12·8	+1 9·0	+0 33·3	−1·0	−2·7	−3·9
46 F	153	Chanchēlāo ...	22 47 50	73 42 40	500	5 4 02	+1 9·1	+1 1·7	+0 24·9	−1·1	−2·8	−4·0
	152	Dākor ...	22 45 10	73 9 10	170	3 4 02	+1 37·1	+1 30·4	+0 55·3	−1·0	−2·6	−3·9
	109	Bodeli ...	22 16 20	73 42 50	250	13 12 01	+1 13·0	+1 4·5	+0 27·7	−1·2	−2·8	−4·0
	110	Itola ...	22 9 10	73 9 40	90	17 1 13	+0 51·2	+1 2·1	+0 26 4	−1·1	−2·7	−3·9
	626	Artia ...	22 2 40	73 58 20	900	26 1 05	+0 29·9	+0 24·8	−0 13·7	−1·3	−3·0	−4·1
46 G	108	Nāndod ...	21 53 20	73 28 30	150	11 12 01	+1 8·9	+1 0·4	+0 23·6	−1·2	−2·8	−4·0
	107(*a*)	Anklesvar ...	21 37 30	73 0 30	60	9 12 01	+0 49·7	+0 41·2	+0 5·5	−1·2	−2·7	−3·9
	106	Fort Songhad ...	21 8 50	73 33 30	400	5 12 01	+0 40·5	+0 30·6	−0 7·9	−1·4	−3·0	−4·1
46 H	630	Baphlun ...	20 32 50	73 29 30	1700	12 2 05	+1 15·7	+1 9·9	+0 31·4	−1·5	−3·0	−4·1
	631	Kanāsi ...	20 31 30	73 52 0	2000	15 2 05	+1 4·1	+0 58·3	+0 18·7	−1·5	−3·1	−4·2
	629	Peint ...	20 15 20	73 29 10	1900	9 2 05	+0 39·8	+0 34·0	−0 5·0	−1·5	−3·0	−4·2
	628	Girdan ...	20 5 20	73 25 50	1200	6 2 05	+0 55·4	+0 49·5	+0 10·5	−1·5	−3·0	−4·2
	224	Khervādi ...	20 2 50	73 58 10	1810	20 4 03	+0 52·2	+0 42·5	+0 2·4	−1·7	−3·1	−4·3
46 I	639	Mānpur ...	23 59 50	74 14 40	630	20 3 05	+1 59·5	+1 55·3	+1 18·5	−1·1	−2·8	−4·0
	638	Bānswāra ...	23 33 10	74 25 50	780	17 3 05	+1 40·7	+1 36·1	+0 58·2	−1·2	−2·9	−4·1
	155	Bhairongarh ...	23 9 0	74 46 40	1250	8 4 02	+1 12·4	+1 3·6	+0 24·6	−1·3	−3·0	−4·2
46 J	154	Dohad ...	22 50 20	74 14 50	1000	6 4 02	+1 9·8	+1 1·0	+0 23·1	−1·3	−2·9	−4·1
	625	Sondwa ...	22 7 10	74 22 20	500	23 1 05	+1 7·6	+1 2·1	+0 23·1	−1·4	−3·0	−4·2
	624	Chikalda ...	22 5 0	74 52 40	460	20 1 05	+0 56·4	+0 50·5	+0 10·4	−1·5	−3·1	−4·3
46 K	554	Nandurbār ...	21 22 30	74 14 40	750	18 12 03	+0 59·5	+0 51·9	+0 12·3	−1·5	−3·1	−4·2
	553	Sindkheda ...	21 14 13	74 44 20	560	17 12 03	+0 53·9	+0 45·8	+0 5·1	−1·6	−3·2	−4·3
46 L	226	Dhūlia ...	20 53 10	74 46 20	850	24 4 03	+0 50·8	+0 41·1	−0 0·1	−1·7	−3·2	−4·4
	632	Jaykhera ...	20 47 40	74 12 10	2000	18 2 05	+0 50·5	+0 44·3	+0 4·2	−1·6	−3·1	−4·3
	XLI	MĀNMĀD ...	20 14 40	74 26 20	1900	10 1 20	+0 18·8	+1 0·1	+0 18·9	−1·7	−3·2	−4·4
46 M	1327	Alot ...	23 45 30	75 32 40	1500	2 4 10	+0 32·6	+0 36·5	−0 3·6	−1·4	−3·1	−4·3
	156	Jaorā ...	23 38 0	75 7 0	1500	6 2 13	+1 5·2	+1 17·9	+0 38·3	−1·3	−3·1	−4·2
	558	Barnagar ...	23 3 50	75 22 30	1600	3 1 04	+1 23·7	+1 16·2	+0 36·1	−1·5	−3·1	−4·3
46 N	LVI	INDORE ...	22 42 8	75 52 40	1800	13 2 20	+0 10·5	+0 53·3	+0 11·0	−1·7	−3·3	−4·5
	623	Dhār ...	22 36 0	75 18 30	1930	5 12 08	+0 40·9	+0 40·8	+0 0·1	−1·5	−3·2	−4·3
	622	Khal Ghat ...	22 8 50	75 27 10	500	18 1 09	+1 53·9	+1 54·1	+1 12·9	−1·6	−3·2	−4·4
46 O	621	Bistān ...	21 41 50	75 40 10	1040	11 3 09	+0 58·2	+0 58 8	+0 16·5	−1·8	−3·3	−4·5
	929	Sendhwa ...	21 40 50	75 5 20	1330	18 2 06	+0 47·0	+0 42·4	+0 1·7	−1·6	−3·2	−4·3
	XVI	BHUSAWAL ...	21 3 40	75 47 0	650	13 1 20	−0 0·6	+0 42·5	−0 0·4	−1·9	−3·4	−4·6

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
46 O	555	Jālgaon ...	21 1 20	75 33 40	670	21 12 03	+0 51·5	+0 42·0	−0 0·3	−1·9	−3·3	−4·5
46 P	227	Chalisgaon ...	20 27 30	75 1 0	1140	26 4 03	+0 54·1	+0 43·9	+0 1·6	−1·8	−3·3	−4·5
	1161	Sillod ...	20 18 40	75 38 50	2000	14 11 07	+0 11·5	+0 9·2	−0 34·2	−2·0	−3·4	−4·6
47 A	103	Dāhānu Road ...	19 58 40	72 44 40	30	20 1 13	+0 55·4	+1 7·1	+0 29·7	−1·4	−2·9	−4·0
	102	Virār ...	19 27 10	72 48 30	20	27 11 01	+0 18·6	+0 8·0	−0 30·5	−1·5	−3·0	−4·1
47 B		**ALIBAG OBSY.** ...	18 38 17	72 52 26	20	...	...	+1 0·7	+0 20·9	−1·7	−3·1	−4·3
	689	Revadanda ...	18 32 20	72 57 0	0	20 11 09	+0 41·9	+0 44·6	+0 4·5	−1·7	−3·1	−4·3
47 E	627	Jawhār ...	19 54 0	73 13 30	1520	3 2 05	+0 23·2	+0 17·3	−0 21·2	−1·5	−3·0	−4·1
	225	Igatpuri ...	19 41 20	73 34 40	1920	22 4 03	+0 39·2	+0 30·1	−0 10·0	−1·6	−3·1	−4·3
	169	Kalyān ...	19 15 0	73 8 20	30	15 1 10	−0 22·6	−0 19·5	−0 58·5	−1·6	−3·0	−4·2
	1322	Narayangaon ...	19 6 40	73 58 10	2130	25 1 10	+0 53·7	+0 57·1	+0 15·9	−1·8	−3·2	−4·4
	1320	Ghoda ...	19 3 10	73 49 50	2100	21 1 10	+0 1·3	+0 4·7	−0 36·5	−1·8	−3·2	−4·4
	648	Manchar ...	19 0 30	73 56 40	2100	19 1 10	+0 17·1	+0 20·5	−0 20·7	−1·9	−3·2	−4·4
47 F	1319	Khed ...	18 51 30	73 53 20	2000	17 1 10	+0 37·1	+0 40·5	−0 0·7	−1·9	−3·2	−4·4
	170 (*a*)	Lonāvla ...	18 44 40	73 23 40	2000	12 1 10	+0 2·7	+0 5·9	−0 34·7	−1·8	−3·1	−4·4
	171 (*a*)	Kirkee ...	18 33 30	73 50 0	1840	28 12 13	−0 10·1	+0 5·9	−0 35·8	−1·9	−3·2	−4·5
47 G	688	Bānkot ...	17 58 20	73 2 30	30	23 11 09	+0 36·9	+0 39·7	−0 0·9	−1·9	−3·1	−4·4
	436	Mahābaleshwar ...	17 55 50	73 39 40	4560	8 11 03	+0 3·4	−0 6·9	−0 48·6	−2·0	−3·2	−4·5
	687	Dābhol ...	17 35 20	73 10 0	0	25 11 09	−0 18·4	−0 15·5	−0 57·2	−2·0	−3·2	−4·5
	437	Helwak ...	17 22 20	73 43 10	2500	13 11 03	+0 43·0	+0 31·7	−0 11·1	−2·2	−3·3	−4·6
	1313	Jaygad ...	17 17 50	73 13 20	0	27 11 09	+0 0·6	+0 3·5	−0 38·7	−2·1	−3·2	−4·6
47 H	686	Ratnāgiri ...	16 59 10	73 18 50	200	28 11 09	+0 33·7	+0 36·7	−0 6·1	−2·2	−3·3	−4·6
	438	Amba ...	16 58 20	73 47 50	2500	20 11 03	+0 20·4	+0 8·6	−0 34·7	−2·3	−3·3	−4·7
	1314	Mūsā-Kazi-Bandar ...	16 37 10	73 20 0	200	30 11 09	−0 29·8	−0 26·8	−1 10·1	−2·3	−3·3	−4·7
	439	Dajeepur ...	16 22 40	73 52 40	2500	25 11 03	+0 6·5	−0 5·7	−0 50·1	−2·4	−3·4	−4·8
	685	Devgarh ...	16 21 50	73 21 50	200	2 12 09	+0 18·6	+0 21·6	−0 21·7	−2·3	−3·3	−4·7
	1315	Mālvan ...	16 3 30	73 27 20	0	4 12 09	−0 27·0	−0 23·9	−1 8·3	−2·4	−3·4	−4·8
47 I	371	Ratagaon or (Vaijāpur)	19 56 40	74 45 50	1820	3 2 10	+0 21·7	+0 25·3	−0 17·0	−1·9	−3·3	−4·5
	222	Puntāmba ...	19 45 40	74 37 20	1600	1 2 10	+0 31·3	+0 34·9	−0 7·4	−1·9	−3·3	−4·5
	649	Sangamner ...	19 34 20	74 13 30	1900	29 1 10	+0 16·1	+0 19·5	−0 21·7	−1·8	−3·2	−4·4
	1325	Miri ...	19 17 0	74 58 0	1800	22 2 10	+0 12·0	+0 15·9	−0 27·5	−2·1	−3·4	−4·6
	221	Ahmadnagar ...	19 4 20	74 43 10	2130	24 2 10	+0 10·9	+0 14·7	−0 28·1	−2·0	−3·3	−4·6
	1321	Singwa ...	19 0 0	74 4 20	2000	24 1 10	−0 2·6	+0 0·8	−0 40·9	−1·9	−3·2	−4·5
47 J	XXXIII	DHOND ...	18 28 0	74 35 10	1690	27 11 19	−0 13·3	+0 29·7	−0 13·7	−2·1	−3·3	−4·6
	220	Rajewadi ...	18 23 0	74 8 30	2300	9 1 10	−1 0·9	−0 57·5	−1 40·3	−2·0	−3·3	−4·6
47 K	672	Nāteputa ...	17 54 10	74 45 30	1800	30 1 05	+0 5·8	−0 3·2	−0 47·1	−2·3	−3·4	−4·7
	219	Wathar ...	17 53 20	74 8 10	2500	7 1 10	+0 11·6	+0 15·0	−0 27·8	−2·1	−3·3	−4·6
	673	Kaledhon ...	17 26 0	74 37 40	2400	4 2 05	+0 20·2	+0 11·2	−0 33·3	−2·3	−3·5	−4·7
	218	Karād ...	17 18 40	74 13 10	1900	5 1 10	+0 0·3	+0 3·7	−0 40·2	−2·3	−3·4	−4·7
47 L	XL	MIRĀJ ...	16 49 10	74 38 10	1800	30 11 19	−0 45·5	−0 0·9	−0 45·9	−2·5	−3·5	−4·8
	217	Kolhāpur ...	16 41 50	74 14 10	1850	2 1 10	+0 7·4	+0 10·8	−0 33·6	−2·4	−3·4	−4·8
	215	Gokāk Road ...	16 14 0	74 44 40	2000	29 12 09	−0 1·2	+0 2·4	−0 44·2	−2·6	−3·6	−5·0
47 M	373	Jālna ...	19 51 50	75 53 0	1600	14 2 10	+0 40·9	+0 44·8	+0 0·3	−2·1	−3·5	−4·7
	372	Aurangābād ...	19 51 30	75 20 20	1800	12 2 10	+0 35·8	+0 39·6	−0 3·8	−2·0	−3·4	−4·6
	1323	Jamkhed ...	19 39 40	75 39 0	1700	17 2 10	+0 39·2	+0 43·2	−0 1·3	−2·1	−3·5	−4·7
	1324	Paithān ...	19 28 30	75 22 50	1550	18 2 10	+0 34·8	+0 38·7	−0 4·7	−2·1	−3·4	−4·6
	651	Shagad ...	19 22 0	75 42 40	1400	18 11 04	+0 18·6	+0 9·5	−0 35·0	−2·2	−3·5	−4·7
	650	Shevgaon ...	19 21 20	75 14 0	1600	20 2 10	+0 29·4	+0 33·3	−0 10·1	−2·1	−3·4	−4·6
47 N	660	Mīrajgaon ...	18 44 0	75 1 20	1860	21 12 04	+0 42·3	+0 33·4	−0 10·5	−2·2	−3·4	−4·7
	652	Chousalla ...	18 42 50	75 41 40	2100	22 11 04	+0 39·7	+0 30·3	−0 14·2	−2·3	−3·5	−4·7
	173	Jeur ...	18 15 50	75 9 40	1710	2 3 10	+0 1·9	+0 6·0	−0 38·5	−2·3	−3·5	−4·7
	174	Bārsi ...	18 14 30	75 42 20	1800	7 3 10	+0 15·5	+0 19·8	−0 25·8	−2·4	−3·6	−4·8
47 O	671	Pandharpur ...	17 39 40	75 19 30	1600	4 3 10	+0 38·2	+0 42·4	−0 3·2	−2·4	−3·6	−4·8
	670	Jath ...	17 2 40	75 12 0	2200	23 1 05	+0 3·9	−0 6·0	−0 52·1	−2·5	−3·6	−4·9
47 P	661	Bijāpur ...	16 50 0	75 43 20	1950	19 3 10	+0 3·4	+0 8·0	−0 39·8	−2·7	−3·8	−5·0
	669	Jamkhandi ...	16 30 50	75 17 10	1800	19 1 05	−0 20·2	−0 30·9	−1 18·1	−2·7	−3·7	−5·0
	667	Almati ...	16 21 10	75 53 20	1700	23 3 10	−0 13·5	−0 8·7	−0 57·1	−2·8	−3·9	−5·0
	668	Karkop ...	16 1 10	75 6 0	2100	16 1 05	+0 10·6	−0 0·5	−0 47·7	−2·8	−3·7	−5·0
48 E	684	Vengurla ...	15 51 30	73 37 20	0	7 12 09	−0 11·6	−0 8·4	−0 52·8	−2·5	−3·4	−4·8
	212	Marmagao ...	15 24 20	73 47 20	20	9 12 09	−0 18·7	−0 15·4	−1 0·9	−2·7	−3·5	−4·9
48 I	214	Belgaum ...	15 50 30	74 31 10	2500	27 12 09	−0 26·7	−0 23·1	−1 9·7	−2·7	−3·6	−5·0
	440	Ramghat ...	15 49 40	74 6 20	2700	2 12 03	+0 33·8	+0 20·6	−0 24·9	−2·6	−3·5	−4·9
	213	Castle Rock ...	15 24 0	74 18 50	1700	26 12 09	−0 27·2	−0 23·7	−1 10·3	−2·8	−3·6	−5·0
48 J	441	Yellāpur ...	14 57 40	74 42 30	1800	8 12 03	−0 6·7	−0 21·9	−1 10·2	−3·0	−3·8	−5·1
	683	Kārwār ...	14 47 31	74 7 20	10	12 12 09	−0 22·4	−0 18·9	−1 6·1	−2·9	−3·7	−5·0

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
48 J	1318	Tadri ...	14 31 20	74 21 30	0	22 12 09	−0 22·2	−0 18·5	−1 6·8	−3·0	−3·8	−5·1
	682	Kūmta ...	14 26 0	74 24 50	0	19 12 09	+0 15·4	+0 19·1	−0 29·2	−3·1	−3·8	−5·1
	1317	Chundanver ...	14 23 40	74 29 0	100	17 12 09	−0 27·0	−0 23·3	−1 11·6	−3·1	−3·8	−5·1
	1316	Honāvar ...	14 16 40	74 26 30	0	16 12 09	−0 43·4	−0 39·8	−1 28·1	−3·1	−3·8	−5·1
48 K	681	Bhatkal ...	13 59 30	74 32 0	150	15 3 05	−0 53·5	−1 5·6	−1 54·5	−3·2	−3·9	−5·1
	680	Cūndapur ...	13 37 30	74 41 40	0	10 3 05	−0 11·7	−0 24·3	−1 13·8	−3·3	−4·0	−5·1
	679	Udipi ...	13 20 40	74 44 20	200	7 3 05	−0 4·7	−0 17·7	−1 7·7	−3·4	−4·0	−5·2
48 L	678	Mangalore ...	12 52 0	74 49 40	100	4 3 05	−0 56·2	−1 9·6	−2 0·2	−3·5	−4·1	−5·2
	677	Kāsaragod ...	12 30 3	74 59 40	100	1 3 05	−1 14·7	−1 28·5	−2 20·2	−3·6	−4·2	−5·3
48 M	666	Alūr ...	15 49 30	75 39 0	2000	26 3 10	−0 17·5	−0 12·7	−1 1·6	−2·9	−3·9	−5·1
	VIII	DHĀRWĀR ...	15 26 36	75 0 10	2400	3 12 19	−1 2·5	−0 15·1	−1 2·9	−2·9	−3·8	−5·0
	665	Gadag ...	15 25 10	75 38 10	2170	28 3 10	−0 5·0	0 0·0	−0 49·5	−3·0	−4·0	−5·1
	211	Yalvigi ...	15 1 50	75 25 0	2100	18 3 03	+0 10·4	−0 7·5	−0 57·0	−3·1	−4·0	−5·1
48 N	210	Rānibennur ...	14 37 0	75 38 30	1800	16 3 03	−0 1·7	−0 20·2	−1 10·3	−3·2	−4·1	−5·1
	442	Banavāsi ...	14 32 20	75 1 10	1900	12 12 03	−0 5·3	−0 21·0	−1 9·9	−3·1	−3·9	−5·1
48 O	443	Mauvinhala ...	13 59 10	75 6 20	2100	17 12 03	−0 4·2	−0 20·8	−1 10·3	−3·3	−4·0	−5·1
	208	Shimoga ...	13 55 30	75 34 0	2000	12 3 03	−0 4·9	−0 24·6	−1 15·2	−3·4	−4·1	−5·2
	XXXIX	BIRUR ...	13 35 50	75 58 10	2500	7 12 19	−1 22·7	−0 31·2	−1 23·0	−3·5	−4·3	−5·2
	444	Koppa ...	13 31 50	75 19 30	2200	21 12 03	−0 25·5	−0 43·1	−1 33·7	−3·5	−4·1	−5·2
48 P	445	Beltangadi ...	12 59 10	75 17 0	300	27 12 03	−0 25·6	−0 43·6	−1 34·8	−3·6	−4·2	−5·2
	447	Sakleshpur ...	12 56 40	75 47 30	3000	5 1 04	−0 21·5	−0 40·0	−1 32·3	−3·7	−4·3	−5·3
	446	Sullia ...	12 34 20	75 23 20	300	30 12 03	−0 18·3	−0 36·8	−1 29·1	−3·7	−4·3	−5·3
	200	Vottekolli ...	12 7 20	75 50 20	3000	20 2 03	−0 33·2	−0 55·5	−1 49·5	−3·8	−4·5	−5·4
	676	Kuvoy ...	12 5 40	75 11 30	0	26 2 05	+1 36·3	+1 22·1	+0 29·8	−3·7	−4·3	−5·3
49 M	XXXVIII	CANNANORE ...	11 52 30	75 22 0	70	18 12 19	−2 4·0	−1 10·8	−2 4·2	−3·8	−4·4	−5·4
	198	West Hill ...	11 17 10	75 45 20	60	13 2 03	+0 13·0	−0 10·5	−1 5·1	−4·0	−4·6	−5·4
52 B	1258	Mulbekh ...	34 23 2	76 21 29	11000	3 10 09	+3 47·8	+3 49·2	+3 18·8	+0·7	−1·9	−3·8
52 D	1301	Dharmsāla ...	32 12 0	76 19 30	4000	2 4 10	+3 9·5	+3 12·4	+2 38·6	0	−2·3	−4·0
	1300	Pālampur ...	32 7 20	76 32 20	5500	30 3 10	+3 5·5	+3 8·5	+2 33·6	−0·1	−2·4	−4·1
52 F	1260	Pānāmik ...	34 47 0	77 33 40	8500	26 9 09	+3 48·9	+3 50·5	+3 17·9	+0·6	−2·1	−4·0
	1259	Leh ...	34 9 30	77 34 15	11500	29 9 09	+3 32·8	+3 34·5	+3 0·8	+0·3	−2·2	−4·1
52 I	1261	Kizil Langar ...	35 12 0	78 0 55	16000	20 9 09	+3 58·8	+4 0·3	+3 27·7	+0·6	−2·1	−4·0
53 A	1299	Urla ...	31 55 20	76 53 10	4000	26 3 10	+3 4·4	+3 7·5	+2 31·5	−0·2	−2·5	−4·2
	1302	Dera Gopipur ...	31 52 50	76 12 30	1500	5 4 10	+3 12·9	+3 15·9	+2 41·0	−0·1	−2·4	−4·1
	1286	Hamīrpur ...	31 41 10	76 31 20	2000	15 2 10	+3 3·6	+3 6·4	+2 30·9	−0·2	−2·5	−4·1
	1287	Galma ...	31 36 0	76 52 30	3000	17 2 10	+3 1·0	+3 3·9	+2 27·3	−0·3	−2·6	−4·2
	1285	Bubhor ...	31 24 30	76 22 20	1300	10 2 10	+3 3·5	+3 6·3	+2 30·8	−0·2	−2·5	−4·1
	1289	Sema or Semu ...	31 11 50	76 55 30	4300	25 2 10	+2 55·5	+2 58·6	+2 20·9	−0·4	−2·7	−4·3
	1284	Abiana ...	31 5 30	76 33 10	1000	7 2 10	+2 58·8	+3 1·7	+2 25·1	−0·3	−2·6	−4·2
53 B	287	Tokara ...	30 50 50	76 55 20	2100	4 2 10	+2 48·9	+2 51·8	+2 14·1	−0·5	−2·7	−4·3
	68	Sirhind ...	30 37 40	76 22 40	870	6 2 02	+2 56·9	+2 54·1	+2 16·9	−0·4	−2·7	−4·2
	67	Patiāla ...	30 20 40	76 24 0	800	13 4 10	+2 46·9	+2 50·4	+2 13·2	−0·5	−2·7	−4·2
	101	Kesri ...	30 15 50	76 55 30	900	27 4 02	+2 51·1	+2 47·1	+2 7·7	−0·6	−2·9	−4·4
53 C	234	Tarāori ...	29 48 20	76 56 0	850	14 11 02	+2 42·1	+2 37·8	+1 57·8	−0·7	−3·0	−4·4
	285	Kalayat ...	29 41 10	76 13 40	760	18 4 03	+2 23·3	+2 20·4	+1 42·6	−0·5	−2·8	−4·2
	286	Karainthi ...	29 1 10	76 29 0	730	19 4 03	+2 11·3	+2 6·7	+1 26·7	−0·8	−3·0	−4·4
53 D	280	Dādri ...	28 36 10	76 16 40	800	8 4 03	+2 9·8	+2 5·2	+1 25·7	−0·8	−3·0	−4·3
	279	Rewāri ...	28 12 20	76 36 20	900	6 4 03	+2 13·5	+2 7·8	+1 27·2	−1·0	−3·1	−4·4
53 E	1298	Bajaora ...	31 50 50	77 9 50	3600	22 3 10	+3 0·9	+3 4·1	+2 27·0	−0·3	−2·6	−4·3
	1297	Manglaur ...	31 40 0	77 17 50	3800	20 3 10	+2 56·0	+2 59·3	+2 21·6	−0·4	−2·7	−4·3
	1296	Kot ...	31 31 0	77 25 10	7600	18 3 10	+2 52·4	+2 55·7	+2 17·5	−0·4	−2·7	−4·4
	1294	Rāmpur ...	31 26 50	77 38 0	2800	12 3 10	+2 47·2	+2 50·6	+2 11·8	−0·5	−2·8	−4·4
	1288	Pangna ...	31 23 10	77 7 20	4000	21 2 10	+3 1·2	+3 4·3	+2 26·6	−0·4	−2·7	−4·3
	1295	Kotgarh ...	31 18 40	77 28 50	6500	15 3 10	+2 48·6	+2 52·0	+2 13·2	−0·5	−2·8	−4·4
	1293	Sungri ...	31 18 40	77 41 50	8000	10 3 10	+2 51·1	+2 54·6	+2 14·7	−0·6	−2·9	−4·5
	1292	Hat Koti ...	31 8 0	77 44 50	5000	7 3 10	+2 54·5	+2 57·9	+2 18·0	−0·6	−2·9	−4·5
	1290	Jutogh ...	31 6 20	77 6 0	5800	28 2 10	+2 48·6	+2 51·7	+2 14·0	−0·5	−2·7	−4·3
	1291	Bagund ...	31 6 7	77 27 30	5000	4 3 10	+2 39·4	+2 42·7	+2 3·9	−0·6	−2·8	−4·4
53 F	1283	Nāhan ...	30 33 30	77 17 50	2990	31 1 10	+2 44·3	+2 47·4	+2 8·0	−0·6	−2·9	−4·4
	165	Ambari ...	30 29 20	77 48 20	1570	21 11 02	+2 43·3	+2 38·4	+1 57·3	−0·8	−3·1	−4·5
	164	Jhajra ...	30 20 30	77 54 50	1800	19 11 02	+2 41·8	+2 36·3	+1 54·7	−0·9	−3·1	−4·6
	166	Mirzāpur ...	30 15 30	77 37 40	1150	23 11 02	+2 47·9	+2 43·0	+2 1·9	−0·8	−3·1	−4·5
	167	Ghuna ...	30 3 50	77 34 40	930	25 11 02	+2 42·6	+2 37·7	+1 56·6	−0·8	−3·1	−4·5
	168	Fatehpur ...	30 2 40	77 45 40	980	27 11 02	+2 44·9	+2 39·4	+1 57·8	−0·9	−3·1	−4·6

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
53 G	229	Sahāranpur ...	29 57 50	77 32 40	900	4 11 02	+2 42·7	+2 37·2	+1 56·1	−0·9	−3·1	−4·5
	230	Muzaffarnagar ...	29 28 30	77 42 0	800	5 11 02	+2 34·6	+2 28·4	+1 46·2	−1·0	−3·2	−4·6
	233	Samālkha ...	29 14 40	77 0 10	750	12 11 02	+2 34·6	+2 29·7	+1 48·6	−0·8	−3·1	−4·5
53 H	231	Meerut City ...	28 58 40	77 41 0	730	8 11 02	+2 27·1	+2 20·3	+1 37·5	−1·1	−3·3	−4·6
	XLII	DELHI ...	28 40 15	77 13 48	680	23 1 20	+1 34·2	+2 16·2	+1 34·5	−1·0	−3·2	−4·5
	600	Chola ...	28 18 30	77 43 40	660	20 4 04	+2 21·2	+2 15·6	+1 32·2	−1·2	−3·4	−4·6
	1186	Palwal ...	28 8 50	77 19 50	650	1 5 08	+2 14·2	+2 13·5	+1 30·7	−1·1	−3·3	−4·6
53 I	1336	Jhala ...	31 1 50	78 42 50	7000	9 5 11	+2 37·4	+2 44·9	+2 2·7	−0·9	−3·2	−4·6
53 J	1337	Barahat ...	30 44 30	78 27 10	5000	18 5 11	+2 33·0	+2 40·6	+1 58·4	−0·9	−3·2	−4·6
	1331	Mussoorie ...	30 27 40	78 5 10	6600	11 9 13	+2 25·4	+2 40·0	+1 58·4	−0·9	−3·1	−4·6
	1282	Tehri ...	30 23 10	78 28 40	2200	20 1 10	+2 35·5	+2 38·9	+1 56·2	−1·0	−3·2	−4·7
		DEHRA DUN OBSY.	30 19 19	78 3 19	2230	...	...	+2 36·5	+1 54·5	−0·9	−3·2	−4·6
	1281	Dungripont ...	30 14 10	78 52 0	1850	13 1 10	+2 34·2	+2 37·7	+1 53·8	−1·1	−3·4	−4·7
53 K	1268	Pokhra ...	29 54 50	78 55 40	4000	24 11 09	+2 29·8	+2 32·9	+1 48·5	−1·2	−3·4	−4·8
	1267	Chaumasu ...	29 54 0	78 44 0	3000	22 11 09	+2 29·3	+2 32·3	+1 48·4	−1·2	−3·4	−4·7
	1266	Lansdowne ...	29 49 36	78 41 20	5600	20 11 09	+2 27·1	+2 30·1	+1 46·2	−1·2	−3·4	−4·7
	228	Laksar ...	29 45 20	78 1 20	780	2 11 02	+2 35·8	+2 29·6	+1 47·4	−1·0	−3·2	−4·6
	602	Nagina ...	29 25 50	78 25 0	800	26 4 04	+2 34·7	+2 29·1	+1 45·2	−1·2	−3·4	−4·7
53 L	601	Morādābād ...	28 50 0	78 45 30	640	23 4 04	+2 26·1	+2 19·5	+1 33·9	−1·4	−3·6	−4·8
	599	Garhmuktesar ...	28 46 43	78 4 0	700	18 4 04	+2 32·5	+2 26·9	+1 43·0	−1·2	−3·4	−4·7
	587	Dhanāri ...	28 19 50	78 30 20	600	18 3 04	+2 11·0	+2 4·3	+1 19·3	−1·4	−3·5	−4·8
53 N	1280	Simili ...	30 13 50	79 15 20	2400	9 1 10	+2 36·2	+2 39·8	+1 54·8	−1·2	−3·5	−4·8
53 O	1278	Kofkote ...	29 57 0	79 53 40	3400	31 12 09	+2 29·9	+2 33·5	+1 47·4	−1·5	−3·6	−4·9
	1279	Baijnāth ...	29 54 40	79 36 50	3400	4 1 10	+2 22·8	+2 26·4	+1 40·3	−1·4	−3·6	−4·9
	1269	Saraikhet ...	29 53 10	79 4 40	5000	26 11 09	+2 29·0	+2 32·2	+1 47·2	−1·3	−3·5	−4·8
	1270	Masi ...	29 49 0	79 16 50	3000	29 11 09	+2 25·0	+2 28·2	+1 43·2	−1·3	−3·5	−4·8
	1271	Rānikhet ...	29 38 50	79 26 0	5900	3 12 09	+2 22·3	+2 25·6	+1 40·0	−1·4	−3·6	−4·8
	1272	Almorā ...	29 35 50	79 40 10	5500	7 12 09	+2 23·8	+2 27·2	+1 41·1	−1·5	−3·6	−4·9
	1273	Maurnala ...	29 27 13	79 47 0	6000	10 12 09	+2 21·7	+2 25·2	+1 38·5	−1·5	−3·7	−4·9
	1265	Rāmnagar ...	29 23 30	79 7 20	1200	15 11 09	+2 18·3	+2 21·4	+1 36·4	−1·4	−3·5	−4·8
	LVIII	KĀTHGODĀM ...	29 15 19	79 32 50	1680	23 3 20	+1 34·9	+2 22·7	+1 36·0	−1·5	−3·7	−4·9
53 P	1304	Khatema ...	28 54 50	79 58 10	650	24 11 09	+2 8·0	+2 11·4	+1 23·6	−1·7	−3·8	−5·0
	597	Richha Road ...	28 43 0	79 29 30	630	12 4 04	+2 16·0	+2 8·5	+1 21·8	−1·6	−3·7	−4·9
	588	Aonla ...	28 17 50	79 10 10	550	19 3 04	+2 18·6	+2 10·9	+1 24·2	−1·6	−3·7	−4·9
	589	Mīrānpur Katra ...	28 2 20	79 40 20	520	21 3 04	+2 9·4	+2 1·3	+1 13·5	−1·7	−3·8	−5·0
54 A	276	Nangal Chaudhri ...	27 53 30	76 6 20	1000	27 3 03	+1 47·1	+1 41·9	+1 2·4	−0·9	−3·0	−4·3
	278	Alwar ...	27 33 40	76 38 0	900	4 4 03	+2 15·6	+2 9·3	+1 27·6	−1·1	−3·2	−4·5
	163	Ārnu ...	27 0 0	76 28 50	1000	23 4 02	+1 57·8	+1 50·4	+1 8·7	−1·1	−3·2	−4·5
54 B	607	Gangāpur ...	26 28 50	76 44 20	1000	20 11 04	+2 8·1	+2 2·7	+1 20·4	−1·3	−3·3	−4·5
	1329	Siwai Madhopur ...	26 1 30	76 21 0	950	8 4 10	+1 39·7	+1 43·8	+1 2·1	−1·3	−3·2	−4·5
54 C	611	Indargarh ...	25 43 50	76 11 0	700	2 12 04	+1 44·3	+1 39·4	+0 58·2	−1·2	−3·2	−4·4
	LIV	BĀRAN ...	25 5 32	76 30 30	850	19 2 20	+0 45·3	+1 28·2	+0 45·9	−1·4	−3·3	−4·5
54 D	1328	Darah ...	24 50 0	76 0 50	1200	3 4 10	+1 25·2	+1 29·2	+0 48·0	−1·4	−3·2	−4·4
	615	Jhālrapātan ...	24 36 0	76 9 20	1020	16 12 04	+1 22·9	+1 17·2	+0 36·0	−1·4	−3·2	−4·4
	617	Khilchipur ...	24 2 0	76 34 20	1300	23 12 04	+1 20·0	+1 13·6	+0 31·3	−1·6	−3·3	−4·5
54 E	1185	Nāndgaon ...	27 42 50	77 23 10	600	28 4 08	+2 8·1	+2 7·3	+1 24·5	−1·2	−3·3	−4·6
	VI	BHARATPUR ...	27 13 53	77 29 24	650	22 2 20	+1 16·6	+2 0·7	+1 17·3	−1·3	−3·4	−4·6
	585	Kherli ...	27 12 10	77 1 30	750	10 3 04	+2 8·9	+2 3·1	+1 20·3	−1·2	−3·3	−4·6
54 F	1330	Hindaun ...	26 45 30	77 2 10	1000	9 4 10	+1 52·3	+1 56·5	+1 13·7	−1·3	−3·3	−4·6
	569	Dholpur ...	26 41 50	77 54 20	600	27 1 04	+1 49·8	+1 42·4	+0 57·9	−1·5	−3·5	−4·7
	606	Manakhar ...	26 24 30	77 16 10	1100	16 11 04	+2 21·8	+2 16·0	+1 32·6	−1·4	−3·4	−4·6
	605	Birpur ...	26 7 30	77 8 20	700	13 11 04	+2 1·3	+1 55·5	+1 12·1	−1·4	−3·4	−4·6
54 G	536	Mahoua ...	25 53 40	77 46 40	1100	6 11 03	+1 46·3	+1 38·2	+0 53·7	−1·6	−3·5	−4·7
	604	Bargaon ...	25 40 10	77 3 10	1600	10 11 04	+1 41·9	+1 35·7	+0 52·3	−1·5	−3·4	−4·6
	537	Sipri ...	25 26 0	77 39 20	1520	8 11 03	+1 34·6	+1 26·4	+0 41·9	−1·6	−3·5	−4·7
	603	Shāhābād ...	25 14 40	77 9 40	1100	7 11 04	+1 38·4	+1 32·2	+0 48·8	−1·5	−3·4	−4·6
54 H	543	Dharnaoda ...	24 35 50	77 5 50	1300	22 11 03	+1 41·9	+1 33·7	+0 50·3	−1·6	−3·4	−4·6
	542	Pachar ...	24 34 50	77 43 40	1600	19 11 03	+1 20·0	+1 10·8	+0 26·3	−1·8	−3·5	−4·7
	618	Naiākila ...	24 3 40	77 15 30	1500	26 12 09	+2 37·6	+2 40·9	+1 57·5	−1·7	−3·4	−4·6
54 I	586	Alīgarh ...	27 53 44	78 4 20	600	12 3 04	+2 9·1	+2 2·4	+1 17·9	−1·4	−3·5	−4·7
	584	Ganj Dūndwāra ...	27 43 30	78 56 20	550	8 3 04	+2 13·9	+2 6·2	+1 19·5	−1·6	−3·7	−4·9
	570	Agra Cantonment ...	27 10 40	78 0 20	550	29 1 04	+1 58·0	+1 50·6	+1 6·1	−1·5	−3·5	−4·7
	571	Shikohābād ...	27 4 30	78 35 30	540	2 2 04	+2 9·8	+2 1·9	+1 16·3	−1·6	−3·6	−4·8
54 J	538	Bhind ...	26 34 5	78 47 50	570	10 11 03	+1 12·9	+1 4·2	+0 17·5	−1·7	−3·7	−4·9

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
54 J	535	Gwalior ...	26 12 53	78 11 0	700	4 11 03	+2 8·9	+2 0·6	+1 15·0	−1·6	−3·6	−4·8
54 K	539	Datiā ...	25 38 40	78 27 30	860	14 4 10	+1 0·1	+1 4·8	+0 18·6	−1·8	−3·7	−4·8
	540	Basai ...	25 8 39	78 23 30	1200	15 11 03	+1 22·1	+1 12·9	+0 26·7	−1·8	−3·7	−4·8
54 L	541 (*a*)	Lalitpur ...	24 41 10	78 25 50	1200	17 11 03	+1 30·8	+1 21·1	+0 34·9	−1·9	−3·7	−4·8
	LV	BĪNA ...	24 10 50	78 11 0	1350	16 2 20	+0 31·1	+1 17·9	+0 31·7	−1·9	−3·7	−4·8
54 M	590	Anjhi ...	27 38 20	79 59 20	500	17 4 10	+1 51·8	+1 56·8	+1 8·4	−1·9	−3·9	−5·0
	583	Farrukhābād ...	27 23 5	79 34 40	450	6 3 04	+2 3·2	+1 54·5	+1 6·7	−1·8	−3·8	−5·0
54 N	572	Alchulda ...	26 41 50	79 24 50	450	4 2 04	+1 57·8	+1 49·0	+1 1·2	−1·8	−3·8	−5·0
	574	Kālpī ..	26 7 0	79 45 50	400	9 2 04	+1 50·4	+1 40·6	+0 51·6	−2·0	−4·0	−5·0
54 O	575	Pūnch ...	25 49 0	79 2 50	500	11 2 04	+1 42·2	+1 32·9	+0 45·6	−1·9	−3·8	−4·9
	577	Mahobā ...	25 18 10	79 50 40	650	15 2 04	+1 49·7	+1 39·5	+0 50·0	−2·1	−4·0	−5·1
	576	Mau-Rānīpur ...	25 15 10	79 9 10	1000	14 2 04	+1 36·3	+1 26·5	+0 38·1	−2·0	−3·9	−5·0
54 P	645	Chhatarpur ...	24 55 50	79 35 10	1050	15 4 05	+1 37·9	+1 30·1	+0 41·1	−2·1	−4·0	−5·0
	644	Khurgapur ...	24 48 50	79 8 50	1100	12 4 05	+1 31·9	+1 24·5	+0 36·1	−2·0	−3·9	−5·0
	643	Shāhgarh ...	24 19 10	79 7 20	1300	9 4 05	+1 35·5	+1 27·7	+0 39·3	−2·1	−3·9	−5·0
55 A	560	Shujālpur ...	23 23 0	76 43 40	1480	6 1 04	+1 47·8	+1 39·3	+0 55·9	−1·7	−3·4	−4·6
	559	Tarāna Road ...	23 15 40	76 3 50	1620	5 1 04	+1 20·5	+1 12·5	+0 30·8	−1·6	−3·2	−4·5
55 B	619	Thuria ...	22 46 10	76 41 20	1500	22 11 11	+1 1·9	+1 11·7	+0 28·3	−1·8	−3·4	−4·6
	620	Hāt Piplia ..	22 46 0	76 17 10	1700	7 12 11	+0 16·1	+0 25·8	−0 16·5	−1·7	−3·3	−4·5
	556	Barwāha ...	22 15 20	76 1 30	630	31 3 09	+0 57·2	+0 58·0	+0 15·7	−1·8	−3·3	−4·5
	550	Piplāni ...	22 7 10	76 47 30	900	8 12 03	+1 41·1	+1 31·0	+0 47 0	−2·0	−3·5	−4·6
55 C	551	Khandwā ...	21 49 20	76 21 50	1000	11 12 03	+0 47·3	+0 37·7	−0 5·7	−1·9	−3·4	−4·6
	797	Darni ...	21 32 40	76 53 10	1000	16 4 10	+0 12·8	+0 17·3	−0 27·2	−2·1	−3·5	−4·7
	552	Burhānpur ...	21 20 10	76 11 40	850	14 12 03	+1 6·2	+0 56·1	+0 12·7	−2·0	−3·4	−4·6
	798	Jiri ...	21 10 40	76 50 50	1000	5 4 10	+0 33·9	+0 38·4	−0 6·7	−2·1	−3·6	−4·7
55 D	781	Nāndūra ...	20 50 20	76 28 30	870	7 1 05	+0 57·6	+0 49·2	+0 4·7	−2·1	−3·5	−4·7
	1162	Deūlghāt ...	20 32 0	76 7 10	1300	19 11 07	+0 33·3	+0 31·0	−0 13·0	−2·1	−3·5	−4·6
	1163	Mehkar ...	20 9 10	76 35 10	1100	22 11 07	+0 45·9	+0 43·5	−0 1·6	−2·2	−3·6	−4·7
55 E	546	Bhīlsa ...	23 31 10	77 48 50	1360	20 1 10	+2 17·7	+2 21·5	+1 36·4	−2·0	−3·6	−4·7
	547	Bhopāl ...	23 15 50	77 24 30	1650	1 12 03	+1 22·3	+1 12·6	+0 28·1	−1·9	−3·5	−4·7
55 F	548	Hoshangābād ...	22 45 10	77 43 0	1030	4 12 03	+1 10·4	+0 59·7	+0 14·1	−2·1	−3·6	−4·8
	549	Pagdhāl ...	22 24 50	77 21 10	1000	6 12 03	+1 16·0	+1 5·9	+0 20·8	−2·0	−3·6	−4·7
	931	Dhar ...	22 21 20	77 51 20	1300	3 3 06	+1 4·1	+0 58·2	+0 12·0	−2·1	−3·7	−4·8
	930	Bori ...	22 8 10	77 25 10	1600	26 2 06	+1 8·4	+1 2·4	+0 17·3	−2·1	−3·6	−4·7
55 G	794	Betūl ...	21 54 50	77 53 40	2180	28 2 10	+0 46·9	+0 51·3	+0 4·5	−2·2	−3·8	−4·8
	795 (*a*)	Palsia ...	21 45 20	77 31 0	1800	12 3 10	+1 3·0	+1 7·4	+0 21·2	−2·1	−3·7	−4·8
	796	Rangubali ...	21 42 40	77 8 20	1600	20 4 10	+0 40·0	+0 44·7	−0 0·4	−2·1	−3·6	−4·7
	800	Bumunwadda ...	21 19 20	77 44 20	1300	1 4 05	+0 40·2	+0 31·6	−0 15·2	−2·3	−3·8	−4·8
	799	Anjangaon ...	21 10 40	77 18 30	1300	2 4 10	+0 23·2	+0 27·8	−0 18·4	−2·2	−3·7	−4·8
55 H	LXIV	AMRAOTI ...	20 55 30	77 45 50	1120	18 3 20	−0 27·6	+0 20·3	−0 26·6	−2·3	−3·8	−4·8
	780	Yavlkhed ...	20 42 50	77 4 30	960	5 1 05	+0 32·1	+0 23·3	−0 22·9	−2·2	−3·7	−4·8
	753	Karanja ...	20 28 30	77 29 20	1400	27 1 10	+0 46·4	+0 50·5	+0 3·7	−2·3	−3·8	−4·8
	752	Bāsim ...	20 6 53	77 8 20	1800	12 1 10	+1 46·1	+1 50·0	+1 3·2	−2·3	−3·8	−4·8
	1164	Chikni ...	20 5 0	77 53 30	1000	12 1 13	+0 31·5	+0 47·6	−0 0·9	−2·5	−4·0	−4·9
55 I	568	Saugor ...	23 50 50	78 44 20	1680	28 3 10	+1 35·3	+1 40·0	+0 52·7	−2·1	−3·8	−4·9
	642	Gourjhanar ...	23 31 30	78 56 0	1400	4 4 05	+1 2·8	+0 54·6	+0 6·7	−2·2	−3·9	−4·9
	641	Silvānī ...	23 18 20	78 26 20	1200	2 3 10	+1 2·6	+1 7·0	+0 20·2	−2·1	−3·8	−4·8
55 J	563	Mohpāni ...	22 44 42	78 50 20	1250	11 1 04	+1 12·3	+1 0·9	+0 13·0	−2·3	−3·9	−4·9
	561	Sohāgpur ...	22 41 30	78 11 20	1080	9 1 04	+1 15·7	+1 5·3	+0 18·6	−2·1	−3·8	−4·8
	932	Jamundonga ...	22 23 0	78 31 30	1800	8 3 06	+1 0·0	+0 53·5	+0 5·5	−2·3	−3·9	−4·9
	773	Chhindwāra ...	22 3 40	78 57 30	2300	19 12 04	+1 5·4	+0 55·7	+0 6·7	−2·4	−4·0	−5·0
55 K	793	Doonawa ...	21 52 0	78 29 30	2400	9 3 05	+0 39·7	+0 30·9	−0 17·0	−2·3	−3·9	−4·9
	801	Lonee ...	21 23 0	78 12 10	1400	4 4 05	+0 55·2	+0 46·6	−0 1·3	−2·3	−3·9	−4·9
	802	Kātol ...	21 16 0	78 35 50	1700	31 12 11	+0 49·3	+1 1·3	+0 12·8	−2·4	−4·0	−4·9
55 L	778	Dhāmangaon ...	20 46 54	78 8 40	980	9 2 12	+0 29·0	+0 42·3	−0 6·2	−2·4	−4·0	−4·9
	776	Paunār ...	20 46 50	78 42 40	830	27 1 12	+0 8·5	+0 21·1	−0 28·5	−2·5	−4·1	−5·0
55 M	566	Salaia ...	23 51 10	79 58 20	1410	26 4 05	+1 23·6	+1 15·1	+0 25·0	−2·3	−4·1	−5·1
	567	Damoh ...	23 50 0	79 26 0	1200	22 1 04	+1 22·3	+1 11·4	+0 22·4	−2·2	−4·0	−5·0
	564	Mirganj ...	23 9 40	79 46 50	1300	15 1 04	+1 17·7	+1 5·8	+0 16·2	−2·4	−4·1	−5·0
	XVII	JUBBULPORE ...	23 9 26	79 57 9	1320	11 3 20	+0 10·0	+1 1·2	+0 11·0	−2·4	−4·2	−5·1
55 N	563	Narsinghpur ...	22 56 40	79 12 30	1200	13 1 04	+1 27·6	+1 16·2	+0 27·2	−2·3	−4·0	−5·0
	791	Lakhnadon ...	22 36 10	79 36 30	2000	24 2 05	+0 59·9	+0 50·7	+0 1·1	−2·4	−4·1	−5·0

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
55 N	933	Jangawani ...	22 23 30	79 9 20	3000	18 3 06	+1 12·0	+1 5·3	+0 16·3	−2·4	−4·0	−5·0
	772	Seoni ...	22 4 10	79 32 50	2020	17 12 04	+0 59·6	+0 49·5	−0 0·7	−2·5	−4·2	−5·0
55 O	792	Deolapar ...	21 35 10	79 22 20	1290	2 3 05	+0 56·1	+0 46·5	−0 3·7	−2·5	−4·2	−5·0
	774	Koka ...	21 15 30	79 43 0	840	22 12 04	+0 54·8	+0 43·9	−0 6·9	−2·7	−4·3	−5·0
	775	Kamptee ...	21 12 30	79 12 40	940	10 1 12	+0 35·1	+0 47·8	−0 2·4	−2·6	−4·2	−5·0
55 P	803	Umrer ...	20 51 0	79 20 0	1000	4 3 12	+0 54·7	+1 8·0	+0 17·8	−2·7	−4·2	−5·0
	804	Dokai-Surandi ...	20 46 0	79 48 0	800	16 4 05	+1 0·5	+0 50·1	−0 0·7	−2·8	−4·3	−5·0
	1040	Chimur ...	20 29 0	79 22 10	1000	10 1 07	+0 42·3	+0 37·0	−0 13·8	−2·7	−4·3	−5·0
	777	Warorā ...	20 14 20	79 0 20	690	29 12 04	+0 47·1	+0 36·3	−0 13·9	−2·7	−4·2	−5·0
56 A												
	1311	Sarsooty ...	19 59 50	76 29 50	1900	31 12 09	+0 21·9	+0 25·5	−0 19·6	−2·2	−3·6	−4·7
	1310	Rahir ...	19 59 40	76 17 20	1640	29 12 09	+0 28·1	+0 31·7	−0 13·4	−2·2	−3·6	−4·7
	1312	Kowotah ...	19 49 50	76 50 10	1680	4 1 10	+0 20·1	+0 23·8	−0 22·4	−2·3	−3·7	−4·8
	374	Satona ...	19 29 30	76 21 30	1440	24 12 09	+0 32·3	+0 35·8	−0 9·8	−2·3	−3·6	−4·8
	XLVII	PARBHANI ...	19 15 20	76 46 50	1350	16 11 19	−0 25·1	+0 21·7	−0 25·7	−2·4	−3·8	−4·9
56 B	654	Mominābād ...	18 44 0	76 23 30	2000	27 11 04	+0 32·9	+0 23·1	−0 23·1	−2·4	−3·7	−4·8
	1326	Tadwale ...	18 22 40	76 3 10	2200	10 3 10	−1 7·7	−1 3·3	−1 49·5	−2·4	−3·7	−4·8
	653	Ter ...	18 19 40	76 9 10	2200	12 3 10	−0 7·3	−0 2·9	−0 49·6	−2·4	−3·7	−4·9
56 C	659	Dallium ...	17 51 50	76 28 40	2100	14 12 04	−0 7·5	−0 18·0	−1 6·4	−2·6	−3·9	−5·0
	1307	Telmood ...	17 49 20	76 45 20	2000	28 11 09	−0 22·0	−0 18·4	−1 7·4	−2·7	−4·0	−5·0
	XXXIV	HOTGI ...	17 33 40	76 0 20	1530	23 11 10	−0 29·1	+0 17·7	−0 29·6	−2 6	−3·8	−4·9
	1306 (*a*)	Aland ...	17 32 50	76 34 40	1800	26 11 09	+1 12·2	+1 15·8	+0 26·8	−2·7	−4·0	−5·0
	176	Ghāngāpur ...	17 20 20	76 36 0	1440	15 11 09	+0 4·7	+0 8·2	−0 40·8	−2·7	−4·0	−5·0
	1305	Gulbarga ...	17 18 50	76 49 10	1490	21 11 09	−0 9·3	−0 5·7	−0 54·7	−2·8	−4·0	−5·0
	177	Wādi Junction ...	17 3 0	77 0 0	1400	17 11 09	+0 4·8	+0 8·4	−0 41·7	−2·9	−4·1	−5·1
56 D	662	Gebbasaligi ...	16 58 50	76 21 0	1600	27 12 04	+0 17·5	+0 6·7	−0 41·7	−2·7	−3·9	−5·0
	663	Shorāpur ...	16 31 0	76 45 40	1800	1 1 05	+0 14·1	+0 2·5	−0 47·6	−2·9	−4·1	−5·1
	664	Mudgal ...	16 1 10	76 27 10	1900	4 1 05	+0 12·8	+0 0·8	−0 49·3	−3·0	−4·1	−5·1
56 E	751	Hingoli ...	19 43 30	77 9 0	1500	7 1 10	+0 48·2	+0 52·1	+0 4·8	−2·4	−3·8	−4·9
	750	Umarkhed ...	19 36 9	77 41 20	1500	28 4 05	+0 31·6	+0 22·4	−0 26·1	−2·5	−4·0	−4·9
	376	Nānder ...	19 9 30	77 18 10	1200	18 12 09	+0 2·4	+0 6·2	−0 41·7	−2·5	−3·9	−4·9
56 F	377	Dharmabad ...	18 53 10	77 51 30	1220	20 12 09	+0 7·7	+0 11·7	−0 37·9	−2·7	−4·1	−5·0
	1309	Kandahar ...	18 51 40	77 11 30	1500	14 12 09	+0 10·3	+0 14·0	−0 33·9	−2·5	−3·9	−4·9
	655	Udgīr ...	18 23 30	77 7 0	2100	10 12 09	+0 38·4	+0 42·2	−0 6·8	−2·6	−4·0	−5·0
	656	Aurād ...	18 15 0	77 24 30	2000	7 12 09	−0 32·8	−0 29·0	−1 18·6	−2·7	−4·1	−5·0
	1308	Bhālki ...	18 2 10	77 11 40	2000	4 12 09	+0 13·7	+0 17·4	−0 31·6	−2·7	−4·0	−5·0
56 G	657	Bīdar ...	17 55 0	77 31 0	2200	7 12 04	+0 28·0	+0 16·6	−0 33·0	−2·8	−4·1	−5·0
	658	Rajasoor ...	17 48 30	77 2 30	2100	1 12 09	+0 10·0	+0 13·7	−0 35·3	−2·7	−4·0	−5·0
	714	Tāndūr ...	17 15 10	77 34 40	1800	24 12 04	+0 18·1	+0 6·5	−0 44·2	−2·9	−4·2	−5·1
56 H	178	Yādgīr ...	16 44 40	77 8 10	1200	31 12 02	+0 21·8	+0 3·8	−0 46·9	−3·0	−4·2	−5·1
	732	Kothakotta ...	16 23 27	77 56 0	1200	22 2 05	+0 2·9	−0 9·4	−1 1·3	−3·2	−4·4	−5·1
	179	Raichūr ...	16 12 0	77 20 30	1330	2 1 03	+0 14·1	−0 4·5	−0 55·8	−3·1	−4·3	−5·1
56 I	747	Dannra ...	19 46 50	78 45 10	690	1 1 13	+0 20·6	+0 37·4	−0 12·8	−2·7	−4·2	−5·0
	748	Kupti ...	19 21 13	78 25 10	1200	14 12 11	+0 2·8	+0 15·2	−0 35·0	−2·7	−4·2	−5·0
	749	Dhānura ...	19 19 10	78 8 30	1300	24 4 05	+1 10·7	+1 0·8	+0 11·2	−2·7	−4·1	−5·0
56 J	741	Bālkonda ...	18 51 31	78 19 40	1160	27 3 05	+0 40·6	+0 30·1	−0 20·1	−2·8	−4·2	−5·0
	742	Jagtial ...	18 47 30	78 54 40	1200	13 2 12	−1 1·7	−0 48·0	−1 39·9	−2·9	−4·4	−5·1
	378	Upalwai ...	18 25 10	78 19 20	1720	21 11 03	+0 36·1	+0 21·3	−0 30·0	−2·9	−4·3	−5·1
56 K	379	Masaipet ...	17 52 40	78 27 30	1710	23 11 03	+0 11·0	−0 4·3	−0 56·2	−3·0	−4·4	−5·1
	716	Kistnapur ...	17 47 57	78 44 11	1700	30 12 04	+0 16·3	+0 3·9	−0 48·0	−3·1	−4·4	−5·1
	XV	SECUNDERĀBĀD ...	17 27 44	78 29 37	1760	19 11 19	−0 36·1	+0 15·3	−0 36·7	−3·1	−4·4	−5·1
	715	Gollagūdā ...	17 25 0	78 1 50	1700	25 12 04	+0 33·8	+0 21·7	−0 29·6	−3·0	−4·3	−5·1
	734	Shumshabad ...	17 15 33	78 23 50	1600	3 4 12	−0 31·0	−0 16·7	−1 8·6	−3·1	−4·4	−5·1
	735	Nārāyanpur ...	17 9 43	78 52 40	1400	30 3 12	−0 33·9	−0 19·3	−1 11·8	−3·3	−4·5	−5·1
56 L	733	Rajumpett ...	16 51 39	78 9 40	1800	25 2 05	+0 15·5	+0 3·2	−0 48·7	−3·2	−4·4	−5·1
	736	Devarkonda ...	16 41 11	78 55 10	1500	7 3 05	+0 11·0	−0 2·0	−0 55·6	−3·4	−4·6	−5·2
56 M	LXII	CHĀNDA ...	19 57 50	79 17 40	770	15 3 20	−0 19·2	+0 32·7	−0 18·2	−2·8	−4·3	−5·0
	1057	Ghot ...	19 49 0	79 59 20	800	23 3 07	+0 32·9	+0 27·6	−0 24·9	−3·0	−4·5	−5·1
	745	Sirpur Tāndūr ...	19 28 30	79 35 0	600	12 4 05	+0 33·2	+0 22·0	−0 29·9	−3·0	−4·4	−5·1
	744	Sokra ...	19 27 40	79 4 10	1500	8 4 05	−0 10·2	−0 21·0	−1 11·8	−2·9	−4·3	−5·0
	1056	Ahiri ...	19 24 40	79 59 50	600	20 3 07	+0 36·6	+0 31·1	−0 21·4	−3·1	−4·5	−5·1
	743	Tāndūr ...	19 9 0	79 26 40	800	14 1 12	−0 4·4	+0 8·9	−0 43·0	−3·0	−4·4	−5·1
56 N	719	Asanada ...	18 45 32	79 44 30	600	8 1 05	+0 29·5	+0 17·2	−0 35·3	−3·1	−4·5	−5·1
	718	Pedapali ...	18 36 30	79 22 30	1100	23 2 12	+1 6·6	+1 20·7	+0 28·2	−3·1	−4·5	−5·1
	720	Kottapalle ...	18 22 2	79 47 10	700	12 1 05	+0 30·3	+0 17·6	−0 35·5	−3·2	−4·6	−5·1
	717	Thaviogpully ...	18 16 41	79 6 30	700	20 3 12	+0 17·7	+0 32·2	−0 20·3	−3·1	−4·5	−5·1

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the peroids 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of Observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
56 O	381	Warangal ...	17 58 40	79 36 50	600	28 11 03	+0 27·9	+0 11·1	−0 42·0	−3·3	−4·6	−5·1
	380 (*a*)	Alir ...	17 38 30	79 2 50	500	24 3 12	−0 3·5	+0 11·1	−0 41·4	−3·2	−4·5	−5·1
	740	Teepurtee ...	17 0 37	79 24 50	500	21 3 05	+0 7·4	−0 5·4	−0 59·0	−3·4	−4·6	−5·2
56 P	739	Dachepalle ...	16 36 0	79 43 40	400	18 3 05	+0 7·3	−0 6·3	−1 0·5	−3·6	−4·7	−5·2
	737	Yelesvaram Ferry ...	16 28 29	79 12 40	400	9 3 05	+0 1·0	−0 12·3	−1 6·5	−3·5	−4·7	−5·2
	738	Komoravale ...	16 6 10	79 20 0	500	12 3 05	−0 25·3	−0 39·0	−1 33·2	−3·6	−4·7	−5·2
57 A	934	Hospet ...	15 16 45	76 23 0	1570	12 2 06	−0 10·1	−0 19·3	−1 10·0	−3·2	−4·2	−5·1
	355	Bellary ...	15 8 50	76 55 30	1480	4 1 08	−0 23·1	−0 26·4	−1 18·2	−3·3	−4·3	−5·2
57 B	674	Nundybayur ...	14 54 10	76 3 20	2000	11 2 05	−1 56·5	−2 9·0	−2 59·1	−3·2	−4·1	−5·1
	401	Hangal ...	14 44 10	76 41 50	1840	6 2 04	−0 4·0	−0 20·7	−1 12·5	−3·4	−4·3	−5·2
	402	Challakere ...	14 19 0	76 39 0	1890	7 2 04	−0 3·1	−0 20·3	−1 12·7	−3·5	−4·4	−5·2
	209	Sūsālu ...	14 12 40	76 6 40	2500	14 3 03	−0 8·0	−0 27·7	−1 19·5	−3·4	−4·3	−5·2
57 C	403	Hiriyūr ...	13 56 30	76 36 40	1960	9 2 04	−0 6·5	−0 24·1	−1 16·5	−3·6	−4·4	−5·2
	206	Tiptūr ...	13 15 10	76 28 30	2900	8 3 03	−0 15·0	−0 36·5	−1 30·0	−3·7	−4·5	−5·3
57 D	449	Yediyur ...	12 58 40	76 51 20	2460	11 1 04	−0 16·8	−0 35·7	−1 29·8	−3·8	−4·6	−5·3
	448	Dandigauhalli ...	12 58 20	76 16 50	3020	8 1 04	−0 14·9	−0 33·3	−1 26·8	−3·7	−4·5	−5·3
	203	Seringapatam ...	12 25 30	76 40 40	2340	1 3 03	−0 19·0	−0 41·8	−1 37·0	−3·9	−4·7	−5·4
	201	Hunsūr ...	12 18 20	76 16 50	2560	24 2 03	−0 41·9	−1 4·7	−1 59·3	−3·9	−4·6	−5·4
	202	Nanjangūd ...	12 7 40	76 40 40	2200	28 2 03	−0 27·7	−0 51·1	−1 46·3	−4·0	−4·7	−5·4
57 E	180	Adoni ...	15 37 0	77 16 30	1360	4 1 03	+0 7·9	−0 11·9	−1 3·8	−3·3	−4·4	−5·1
	713	Kurnool Road ...	15 23 20	77 52 10	1500	22 12 04	+0 3·2	−0 10·9	−1 3·9	−3·5	−4·5	−5·2
	XXXV	GUNTAKAL ...	15 10 48	77 22 57	1410	12 2 20	−1 10·0	−0 16·4	−1 9·4	−3·4	−4·5	−5·2
57 F	354	Gārladinne ...	14 50 0	77 35 20	1200	20 3 03	+0 7·5	−0 12·7	−1 5·7	−3·5	−4·5	−5·2
	400	Kalyandrug ...	14 32 50	77 6 40	1800	31 1 04	−0 19·5	−0 36·7	−1 29·7	−3·5	−4·5	−5·2
	351	Dharmavaram ...	14 25 20	77 42 40	1200	13 3 03	−0 10·6	−0 32·1	−1 25·7	−3·7	−4·6	−5·2
	399	Povugada ...	14 6 20	77 17 10	2100	29 1 04	+0 1·8	−0 16·4	−1 10·0	−3·7	−4·6	−5·2
57 G	352	Malugur ...	13 54 0	77 32 50	1800	16 3 03	+0 8·6	−0 13·4	−1 8·1	−3·8	−4·7	−5·3
	353	Thondebhavi ...	13 30 10	77 31 0	2400	17 3 03	−0 17·9	−0 40·5	−1 35·2	−3·9	−4·7	−5·3
	205	Tumkūr ...	13 20 0	77 6 0	2680	7 3 03	+0 14·9	−0 7·2	−1 1·3	−3·8	−4·6	−5·3
57 H	VII	BANGALORE ...	12 58 43	77 35 26	3000	10 12 19	−1 35·6	−0 40·6	−1 35·9	−4·0	−4·8	−5·3
	204	Channapatna ...	12 39 40	77 12 0	2100	3 3 03	−0 17·0	−0 40·3	−1 35·5	−4·0	−4·7	−5·4
	450	Singanallur ...	12 8 30	77 13 0	2100	21 1 04	−0 15·6	−0 35·9	−1 31·7	−4·1	−4·8	−5·4
57 I	731	Kurnool City ...	15 49 50	78 2 20	970	19 2 05	+0 3·0	−0 10·2	−1 3·2	−3·4	−4·5	−5·2
	712	Nandyāl ...	15 28 20	78 28 0	1000	13 1 10	−0 24·5	−0 19·6	−1 13·8	−3·6	−4·7	−5·2
	711	Diguvametta ...	15 23 30	78 49 20	1500	17 12 04	−0 3·5	−0 18·5	−1 12·7	−3·7	−4·7	−5·2
57 J	730	Chāgalamarri ...	14 56 41	78 35 20	600	13 2 05	−0 8·2	−0 22·6	−1 16·8	−3·7	−4·7	−5·2
	182	Kondāpuram ...	14 46 20	78 11 40	720	10 1 03	−0 10·5	−0 32·6	−1 26·8	−3·7	−4·7	−5·2
	183	Cuddapah ...	14 27 10	78 49 20	450	11 1 03	+0 4·1	−0 19·2	−1 14·5	−3·9	−4·8	−5·3
	350	Kadiri ...	14 6 50	78 9 0	1900	12 3 03	−0 9·5	−0 31·5	−1 26·2	−3·8	−4·7	−5·3
57 K	349	Tummanamgutta ...	13 42 50	78 21 30	2000	10 3 03	−0 9·8	−0 33·0	−1 28·3	−4·0	−4·8	−5·3
	348	Kalikiri ...	13 38 40	78 47 40	2000	7 3 03	−0 14·9	−0 38·7	−1 34·0	−4·1	−4·9	−5·3
	398	Madanapalle ...	13 34 40	78 30 30	2400	23 1 04	−0 15·9	−0 35·7	−1 31·6	−4·0	−4·9	−5·3
	675	Tadgole ...	13 24 50	78 13 0	2800	20 2 05	−0 27·2	−0 42·7	−1 38·0	−4·0	−4·8	−5·3
	397	Palmaner ...	13 12 40	78 44 50	2200	21 1 04	−0 25·9	−0 46·7	−1 43·2	−4·2	−5·0	−5·3
57 L	190	Bowringpet ...	12 58 50	78 11 0	2660	25 1 03	−0 17·9	−0 42·2	−1 38·1	−4·1	−4·9	−5·3
	1335	Mysore Mines on Surface	12 55 30	78 15 40	2950	2 3 11	−0 55·5	−0 44·8	−1 40·7	−4·1	−4·9	−5·3
	„	„ „ Underground	12 55 30	78 15 40	„	3 3 11	−2 1·3	−1 50·6	−2 46·5	−4·1	−4·9	−5·3
	189	Jalārpet ...	12 34 0	78 34 10	1320	23 1 03	−0 36·8	−1 2·3	−1 59·9	−4·3	−5·1	−5·4
	191	Morappūr ...	12 7 30	78 21 40	1310	28 1 03	−0 31·0	−0 56·5	−1 54·1	−4·3	−5·1	−5·4
57 M	709	Gundlakamma ...	15 59 10	79 38 20	400	14 12 04	0 0·0	−0 15·0	−1 9·8	−3·7	−4·8	−5·2
	726	Podili ...	15 37 5	79 36 20	300	2 2 05	−0 3·6	−0 18·5	−1 13·3	−3·8	−4·8	−5·2
	LXI	CUMBUM ...	15 35 50	79 6 40	600	15 2 20	−1 36·6	−0 35·7	−1 35·9	−3·7	−4·7	−5·2
	727	Pāmūru ...	15 5 20	79 24 40	500	5 2 05	−0 6·2	−0 21·4	−1 16·8	−3·9	−4·9	−5·2
57 N	387	Bitragunta ...	14 48 40	79 57 20	30	5 1 09	−0 57·7	−0 57·7	−1 53·7	−4·1	−5·0	−5·2
	729	Badvel ...	14 43 57	79 3 50	600	10 2 05	−0 5·9	−0 21·1	−1 15·9	−3·9	−4·8	−5·2
	728	Nandabaram ...	14 40 33	79 28 50	100	8 2 05	−0 3·3	−0 18·9	−1 14·3	−4·0	−4·9	−5·2
	346	Gūdūr ...	14 8 40	79 51 10	50	4 3 03	+0 1·6	−0 22·9	−1 20·0	−4·2	−5·1	−5·3
	184	Reddipalle ...	14 5 30	79 14 0	560	13 1 03	−0 7·9	−0 32·4	−1 28·9	−4·1	−5·0	−5·3
57 O	185	Rēnigunta ...	13 38 20	79 30 50	370	15 1 03	−0 5·0	−0 30·6	−1 27·7	−4·3	−5·1	−5·3
	347	Pākala ...	13 27 0	79 7 20	1200	6 3 03	−0 6·6	−0 31·6	−1 28·1	−4·3	−5·0	−5·3
	XXXVI	ARKONAM ...	13 4 30	79 40 20	300	8 2 20	−1 42·1	−0 43·8	−1 41·5	−4·4	−5·2	−5·3
57 P	188	Katpadi ...	12 58 40	79 7 40	700	21 1 03	−0 17·0	−0 42·5	−1 39·6	−4·3	−5·1	−5·3
	345	Chingleput ...	12 41 20	79 58 30	130	27 2 03	−0 24·0	−0 50·9	−1 49·2	−4·6	−5·3	−5·3
	344	Polūr ...	12 30 50	79 7 50	700	23 2 03	+0 2·4	−0 23·4	−1 21·0	−4·4	−5·1	−5·4
	389	Acharapakkam ...	12 24 10	79 49 10	135	15 12 03	−0 54·5	−1 17·7	−2 16·5	−4·6	−5·3	−5·4
	343	Tandarai ...	12 6 40	79 9 0	500	21 2 03	−0 24·1	−0 50·5	−1 48·7	−4·5	−5·2	−5·4

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
58 A	453	Gundalpet ...	11 48 20	76 41 20	2600	4 2 04	−0 27·9	−0 47·5	−1 43·3	−4·0	−4·8	−5·4
	454	Sultan's Battery ...	11 39 40	76 15 30	2900	7 2 04	−0 30·9	−0 50·5	−1 45·7	−4·0	−4·7	−5·4
	455	Ootacamund ...	11 24 30	76 42 50	8000	14 2 04	−0 28·5	−0 48·5	−1 44·8	−4·1	−4·8	−5·5
	195	Coonoor ...	11 20 40	76 47 50	6000	6 2 03	−0 24·8	−0 49·6	−1 46·5	−4·2	−4·9	−5·5
	456	Nilambūr ...	11 16 20	76 13 20	100	17 2 04	−0 29·9	−0 49·9	−1 45·6	−4·1	−4·7	−5·5
58 B	197	Pattāmbi ...	10 48 10	76 10 40	70	10 2 03	−0 25·9	−0 50·6	−1 46·9	−4·2	−4·8	−5·5
	196	Olavakkōt ...	10 48 10	76 38 20	260	8 2 03	−0 39·2	−1 4·6	−2 1·5	−4·3	−4·9	−5·5
	457	Anamalai ...	10 34 50	76 56 0	1300	23 2 04	−0 46·8	−1 8·2	−2 6·2	−4·4	−5·0	−5·6
	475	Irinjālakuda ...	10 20 20	76 13 0	50	4 5 04	−0 54·7	−1 14·7	−2 12·1	−4·3	−4·9	−5·6
	474	Kodhamangalam ...	10 3 40	76 37 40	100	2 5 04	−0 56·7	−1 17·2	−2 16·3	−4·4	−5·1	−5·7
58 C	473	Cochin ...	9 57 50	76 14 0	10	28 4 04	−0 32·9	−0 53·5	−1 52·0	−4·4	−5·0	−5·7
	464	Kanjirapalli ...	9 33 0	76 46 50	300	26 3 04	−1 0·3	−1 22·2	−2 22·4	−4·6	−5·2	−5·8
	465	Alleppey ...	9 29 50	76 19 10	0	28 3 04	−0 58·7	−1 20·1	−2 19·7	−4·5	−5·1	−5·8
	467	Punalūr ...	9 1 20	76 55 30	200	4 4 04	−0 58·2	−1 20·5	−2 21·8	−4·7	−5·3	−5·9
58 D	466	Quilon ...	8 53 30	76 36 0	0	1 4 04	+0 13·0	−0 8·9	−1 9·6	−4·6	−5·2	−5·9
	472	Trivandrum ...	8 28 50	76 55 30	0	23 4 04	−0 46·6	−1 8·7	−2 10·0	−4·7	−5·3	−5·9
58 E	451	Kāveripuram ...	11 54 20	77 45 30	1000	27 1 04	−0 25·1	−0 46·3	−1 43·3	−4·3	−5·0	−5·4
	452	Satyamangalam ...	11 30 0	77 14 20	800	31 1 04	−0 22·4	−0 43·1	−1 40·6	−4·2	−5·0	−5·5
	193	Erode ...	11 19 40	77 43 50	540	1 2 03	−0 27·9	−0 53·9	−1 52·0	−4·4	−5·1	−5·5
	194	Sōmanūr ...	11 5 10	77 11 0	1120	3 2 03	−0 31·6	−0 57·0	−1 54·5	−4·3	−5·0	−5·5
58 F	458	Dhārāpuram ...	10 43 30	77 31 20	850	27 2 04	−0 47·6	−1 9·4	−2 8·0	−4·5	−5·1	−5·6
		KODAIKANAL Obsy.	10 13 50	77 27 46	7550	...	...	−0 47·5	−1 47·9	−4·6	−5·2	−5·8
	330	Ammayanayakkanur ...	10 10 30	77 54 20	780	17 1 03	−0 35·2	−1 2·6	−2 3·4	−4·6	−5·3	−5·8
	462	Nyamakod Estate ...	10 8 10	77 3 10	8500	16 3 04	−0 41·7	−1 3·3	−2 2·9	−4·5	−5·1	−5·8
	459	Periyakulam ...	10 7 40	77 33 20	950	3 3 04	−1 7·4	−1 29·6	−2 29·8	−4·6	−5·2	−5·8
	460	Top Station ...	10 6 40	77 13 20	8000	11 3 04	−0 10·2	−0 31·8	−1 32·0	−4·5	−5·2	−5·8
	461	Munnar ...	10 4 10	77 3 20	7500	13 3 04	−0 35·5	−0 57·1	−1 57·3	−4·5	−5·2	−5·8
58 G	463	Kuruvanath ...	9 38 50	77 12 30	4000	21 3 04	−0 59·9	−1 21·9	−2 22·1	−4·6	−5·2	−5·8
	469	Virudupatti ...	9 35 50	77 57 40	330	10 4 04	−1 11·3	−1 33·5	−2 34·3	−4·7	−5·3	−5·8
	329	Koilpati ...	9 10 30	77 51 50	290	14 1 03	−0 55·9	−1 24·5	−2 26·4	−4·8	−5·4	−5·9
58 H	468	Tenkāsi ...	8 58 0	77 18 30	500	7 4 04	−1 1·5	−1 23·7	−2 25·0	−4·7	−5·3	−5·9
	XLIV	TINNEVELLY ...	8 44 0	77 42 30	130	11 1 20	−2 28·3	−1 26·2	−2 28·1	−4·9	−5·4	−5·9
	471	Nāgercoil ...	8 11 20	77 26 0	200	19 4 04	−1 2·7	−1 25·7	−2 27·6	−4·9	−5·4	−5·9
58 I	192	Salem ...	11 40 0	78 6 50	920	30 1 03	−0 28·0	−0 54·0	−1 52·1	−4·4	−5·1	−5·5
	391	Atūr ...	11 35 40	78 36 50	500	22 12 03	−0 27·6	−0 50·2	−1 48·9	−4·5	−5·2	−5·5
	392	Perambalūr ...	11 14 10	78 51 50	500	25 12 03	−0 33·9	−0 57·0	−1 56·3	−4·6	−5·3	−5·5
58 J	336	Puliyur ...	10 56 0	78 10 10	370	1 2 03	−0 49·1	−1 16·3	−2 15·5	−4·6	−5·2	−5·6
	335	Trichinopoly ...	10 47 30	78 40 40	270	27 12 07	−1 3·7	−1 8·4	−2 8·2	−4·7	−5·3	−5·6
	331	Manapārai ...	10 36 40	78 25 30	510	20 1 03	−0 41·0	−1 9·0	−2 8·8	−4·7	−5·3	−5·6
	393	Pudukottai ...	10 22 50	78 48 50	400	30 12 03	−0 30·4	−0 54·4	−1 54·8	−4·8	−5·4	−5·6
	396	Nattam ...	10 13 40	78 14 0	700	14 1 04	−0 40·8	−1 4·1	−2 4·4	−4·7	−5·3	−5·7
	395	Tiruppattūr ...	10 7 10	78 36 0	300	10 1 04	−0 58·2	−1 22·1	−2 23·0	−4·8	−5·4	−5·7
58 K	334	Tiruppuvanam ...	9 49 20	78 15 40	400	27 1 03	−0 48·2	−1 16·6	−2 18·0	−4·8	−5·4	−5·8
	333	Sattirakkudi ...	9 24 0	78 42 10	60	25 1 03	−0 49·9	−1 19·0	−2 20·5	−4·9	−5·5	−5·7
58 L	327	Tuticorin ...	8 48 10	78 9 0	10	15 1 09	−1 20·2	−1 20·0	−2 21·4	−4·9	−5·4	−5·8
	470	Manapadu ...	8 22 20	78 4 0	0	15 4 04	−1 6·2	−1 29·7	−2 31·7	−5·0	−5·5	−5·8
58 M	341	Villupuram ...	11 56 40	79 29 50	140	17 12 03	+0 15·0	−0 8·2	−1 7·0	−4·6	−5·3	−5·4
	342	Pondicherry ...	11 56 0	79 49 50	50	18 2 03	−0 29·5	−0 57·1	−1 55·9	−4·7	−5·3	−5·4
	340	Alapākam ...	11 37 10	79 43 10	20	14 2 03	−0 38·6	−1 6·3	−2 5·1	−4·7	−5·3	−5·4
	390	Eranji ...	11 35 50	79 10 20	250	19 12 03	−0 24·2	−0 47·4	−1 46·2	−4·6	−5·3	−5·4
	338	Māyavaram ...	11 5 50	79 38 30	50	6 2 03	−0 16·6	−0 44·9	−1 44·8	−4·8	−5·4	−5·5
58 N	XLVI	TANJORE ...	10 46 40	79 8 20	190	1 2 20	−2 10·5	−1 10·1	−2 10·0	−4·8	−5·4	−5·5
	389	Tirutturaippūndi ...	10 32 20	79 38 10	20	12 2 03	−0 30·7	−0 59·5	−2 0·0	−4·9	−5·5	−5·5
	394	Setabava Chattram ...	10 14 50	79 16 50	0	4 1 04	−0 38·0	−1 2·5	−2 3·5	−4·9	−5·5	−5·6
58 O	XLV	MANDAPAM ...	9 16 50	79 8 30	0	15 1 20	−2 16·1	−1 14·3	−2 15·9	−5·0	−5·6	−5·6
58 P	1377	Mannar ...	8 59 10	79 54 30	10	3 3 13	−1 34·6	−1 10·4	−2 12·7	−5·2	−5·8	−5·5
	1378	Marichchukaddi ...	8 34 50	79 55 0	20	4 3 13	−1 46·8	−1 22·2	−2 24·6	−5·3	−5·9	−5·4
	1379	Puttalam ...	8 1 38	79 49 0	10	5 3 13	−1 48·4	−1 23·3	−2 26·3	−5·3	−6·0	−5·4
59 M	1380	Chilaw ...	7 34 20	79 46 50	10	7 3 13	−1 53·2	−1 27·7	−2 31·3	−5·4	−6·1	−5·4
	1381	Negombo ...	7 12 30	79 49 20	10	10 3 13	−1 54·0	−1 28·0	−2 32·2	−5·5	−6·2	−5·4
59 N	1398	Colombo ...	6 54 17	79 52 15	10	1 2 13	−1 44·8	−1 19·5	−2 23·7	−5·5	−6·2	−5·4
62 C	1277	Nochani ...	29 54 20	80 9 40	3000	27 12 09	+2 29·5	+2 33·2	+1 46·5	−1·6	−3·7	−4·9
	1276	Askot ...	29 45 41	80 19 30	3000	22 12 09	+2 28·3	+2 31·9	+1 44·7	−1·6	−3·7	−5·0

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
62 C	1275	Pithoragarh ...	29 35 0	80 12 30	5400	18 12 09	+2 18·0	+2 21·6	+1 34·4	−1·6	−3·7	−5·0
	1274	Lohaghat ...	29 24 20	80 5 30	5500	15 12 09	+2 18·3	+2 21·8	+1 34·6	−1·6	−3·7	−5·0
62 D	596	Shāhgarh ...	28 33 30	80 3 10	650	10 4 04	+2 17·0	+2 9·0	+1 21·2	−1·7	−3·8	−5·0
	594	Chandan Choki ...	28 32 22	80 46 40	600	5 4 04	+2 18·8	+2 9·8	+1 20·3	−1·9	−4·0	−5·1
	595	Khutār ...	28 12 0	80 15 40	600	7 4 04	+2 9·4	+2 0·9	+1 12·5	−1·8	−3·9	−5·0
62 H	LII	KATARNIAN GHĀT	28 19 50	81 7 50	600	29 2 20	+1 16·7	+2 7·7	+1 17·6	−2·0	−4·1	−5·1
63 A	593	Lakhimpur ...	27 56 18	80 46 20	450	2 4 04	+2 8·4	+1 58·9	+1 9·4	−2·0	−4·0	−5·1
	592	Kamālpur ...	27 22 30	80 49 40	450	30 3 04	+2 1·2	+1 51·2	+1 1·1	−2·1	−4·1	−5·1
	591	Sanoda ...	27 6 58	80 25 10	500	25 3 04	+1 58·5	+1 49·0	+0 58·9	−2·0	−4·1	−5·1
63 B	582	Araul ...	26 55 0	80 1 40	450	3 3 04	+1 52·7	+1 43·0	+0 54·0	−2·0	−4·0	−5·0
	476	Lucknow ...	26 50 0	80 55 20	400	27 3 04	+1 55·0	+1 44·5	+0 53·8	−2·2	−4·2	−5·1
	LVII	CAWNPORE ...	26 27 0	80 21 0	400	27 2 20	+0 58·2	+1 49·1	+0 59·0	−2·1	−4·1	−5·1
	581	Mālwā ...	26 0 50	80 40 0	380	29 2 04	+1 42·7	+1 32·0	+0 41·3	−2·2	−4·2	−5·1
63 C	578	Atarra ...	25 17 20	80 34 10	430	17 2 04	+1 38·9	+1 27·7	+0 37·0	−2·3	−4·2	−5·1
63 D	646	Ajaigarh ...	24 54 10	80 15 30	650	18 4 05	+1 26·0	+1 17·5	+0 27·4	−2·3	−4·1	−5·1
	579	Sutnā ...	24 34 20	80 50 0	1000	25 4 08	+1 27·9	+1 26·2	+0 34·4	−2·5	−4·3	−5·2
	647	Amānganj ...	24 25 40	80 2 30	1100	22 4 05	+1 29·0	+1 20·5	+0 30·4	−2·3	−4·1	−5·1
	580	Amdara ...	24 6 10	80 34 40	1210	26 2 04	+1 20·6	+1 8·5	+0 17·8	−2·5	−4·2	−5·1
63 E	517	Nānpāra ...	27 51 40	81 31 10	500	28 3 04	+2 13·3	+2 2·8	+1 12·1	−2·2	−4·2	−5·1
	515	Gondā ...	27 8 30	81 58 20	350	23 3 04	+2 3·7	+1 52·2	+0 59·8	−2·4	−4·4	−5·2
63 F	514	Daryābād ...	26 51 30	81 33 0	350	21 3 04	+1 54·9	+1 43·9	+0 52·1	−2·3	−4·3	−5·2
	477	Rāe-Barelī ...	26 14 0	81 14 40	400	5 11 03	+1 44·9	+1 32·5	+0 40·7	−2·4	−4·3	−5·2
	478	Amethī ...	26 9 20	81 48 40	400	7 11 03	+1 53·0	+1 40·1	+0 47·7	−2·5	−4·4	−5·2
63 G	482	Kunwār ...	25 42 0	81 13 10	340	16 11 03	+1 52·7	+1 40·4	+0 48·6	−2·4	−4·3	−5·2
	481	Allahābād ...	25 27 30	81 49 20	300	1 12 10	+1 17·1	+1 25·7	+0 32·7	−2·6	−4·5	−5·2
	XLIX	MĀNIKPUR ...	25 3 10	81 5 20	800	8 3 20	+0 31·9	+1 24·7	+0 32·9	−2·4	−4·3	−5·2
63 H	892	Sohagi ...	24 59 20	81 42 0	630	9 2 06	+1 21·7	+1 14·2	+0 21·2	−2·6	−4·5	−5·2
	891	Mauganj ...	24 40 50	81 50 40	1200	6 2 06	+1 35·7	+1 27·9	+0 34·9	−2·7	−4·5	−5·2
	893	Rewah ...	24 33 0	81 17 50	1040	14 2 06	+1 22·4	+1 14·9	+0 22·5	−2·6	−4·4	−5·2
	894	Rāmnagar ...	24 11 0	81 [illegible]8 50	1400	20 2 06	+1 25·1	+1 17·6	+0 25·2	−2·6	−4·4	−5·2
	895	Majholī ...	24 6 47	81 37 0	1200	23 2 06	+1 6·0	+0 58·3	+0 5·3	−2·7	−4·5	−5·2
63 I	516	Tulsipur ...	27 31 30	82 24 40	350	26 3 04	+2 7·6	+1 55·7	+1 3·3	−2·5	−4·4	−5·2
63 J	519	Basti ...	26 49 10	82 46 30	290	1 4 04	+1 53·4	+1 41·0	+0 47·4	−2·6	−4·6	−5·2
	X	FYZĀBĀD ...	26 48 5	82 8 5	330	3 3 20	+0 51·9	+1 45·2	+0 52·8	−2·5	−4·4	−5·2
	513	Mālipur ...	26 16 10	82 38 50	300	19 3 04	+1 48·6	+1 35·7	+0 42·1	−2·7	−4·6	−5·2
63 K	479	Suriāwān ...	25 28 0	82 25 50	300	10 11 03	+1 46·7	+1 32·8	+0 38·7	−2·7	−4·6	−5·3
	480	Chunār ...	25 6 10	82 52 30	300	12 11 03	+1 34·1	+1 19·2	+0 24·5	−2·9	−4·7	−5·3
	890	Lālganj ...	25 1 20	82 22 10	500	2 2 06	+1 32·2	+1 24·0	+0 29·9	−2·8	−4·6	−5·3
63 L	889	Shāhganj ...	24 42 30	82 56 40	1400	24 1 06	+1 20·7	+1 12·2	+0 16·9	−2·9	−4·8	−5·3
	896	Jiawan ...	24 20 20	82 16 20	1200	28 2 06	+1 22·4	+1 14·4	+0 20·8	−2·8	−4·6	−5·2
	897	Saipur ...	24 2 30	82 41 30	900	4 3 06	+1 21·0	+1 12·5	+0 17·8	−3·0	−4·7	−5·3
63 M	521	Uskā Bāzār ...	27 11 30	83 6 20	280	5 4 04	+1 56·1	+1 43·8	+0 50·2	−2·6	−4·6	−5·2
63 N	520	Gorakhpur ...	26 45 0	83 23 20	250	2 4 04	+1 52·6	+1 39·8	+0 45·1	−2·7	−4·7	−5·3
	522	Bhatni ...	26 23 0	83 55 40	250	6 5 08	+1 36·1	+1 34·2	+0 38·3	−2·9	−4·9	−5·3
	524	Azamgarh ...	26 1 50	83 11 10	250	11 4 04	+1 45·8	+1 32·6	+0 37·9	−2·8	−4·7	−5·3
63 O	523	Mau ...	25 56 20	83 34 20	240	8 4 04	+1 51·8	+1 38·1	+0 42·8	−2·9	−4·8	−5·3
	996	Zahūrābād ...	25 44 40	83 43 30	230	1 11 06	+1 30·8	+1 24·5	+0 28·6	−2·9	−4·9	−5·3
	995	Ghāzīpur ...	25 33 50	83 33 20	220	31 10 06	+1 34·3	+1 28·0	+0 32·7	−2·9	−4·8	−5·3
	512	Buxar ...	25 33 30	83 57 40	200	21 11 10	+3 9·1	+3 18·4	+2 22·5	−3·0	−4·9	−5·3
	525	Aunrihar ...	25 32 10	83 9 50	240	13 4 04	+1 44·5	+1 30·8	+0 35·5	−2·9	−4·8	−5·3
	959	Gahmar ...	25 29 0	83 48 10	200	31 10 06	+1 39·1	+1 32·6	+0 36·7	−3·0	−4·9	−5·3
	484	Karmnasa ...	25 14 30	83 25 20	240	21 11 03	+1 38·4	+1 23·1	+0 27·2	−3·0	−4·9	−5·3
63 P	888	Manchee ...	24 39 40	83 25 50	1000	21 1 06	+1 51·5	+1 42·7	+0 46·8	−3·0	−4·9	−5·3
	485	Japla ...	24 32 30	84 0 0	600	24 11 03	+1 11·3	+0 55·0	−0 1·5	−3·2	−5·0	−5·3
	887	Poodhee ...	24 12 40	83 14 30	1000	14 1 06	+1 31·1	+1 21·9	+0 26·6	−3·1	−4·8	−5·3
	886	Meeral ...	24 11 20	83 42 30	1000	11 1 06	+1 21·7	+1 12·2	+0 16·3	−3·2	−4·9	−5·3
64 A	565	Sleemanābād ...	23 36 30	80 16 20	1400	18 1 04	+1 10·9	+0 59·0	+0 8·3	−2·4	−4·2	−5·1
	763	Umariā ...	23 31 10	80 49 10	1520	26 11 04	+1 17·5	+1 6·8	+0 15·5	−2·6	−4·3	−5·1
	782	Churi ...	23 12 40	80 30 0	1900	14 1 05	+1 13·2	+1 2·9	+0 11·6	−2·6	−4·3	−5·1
	783 (*a*)	Kasai Sonda ...	23 4 50	80 53 50	2300	18 1 05	+1 47·6	+1 36·9	+0 45·0	−2·7	−4·4	−5·1
64 B	790	Kakaria ...	22 48 10	80 15 10	1400	18 2 05	+0 56·1	+0 46·4	−0 4·3	−2·5	−4·2	−5·1

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nd the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
64 B	789	Thonda ...	22 27 50	80 38 30	1600	13 2 05	+0 54·9	+0 44·4	−0 7·5	−2·7	−4·4	−5·1
	771	Nainpur ...	22 25 36	80 5 40	1450	15 12 04	+0 59·3	+0 48·8	−0 1·9	−2·6	−4·2	−5·1
64 C	770	Bālāghāt ...	21 48 40	80 12 10	1050	13 12 04	+0 54·6	+0 43·7	−0 7·6	−2·7	−4·3	−5·1
	769	Sālekasa ...	21 17 30	80 30 40	1050	1 4 12	+0 21·7	+0 36·0	−0 15·9	−2·9	−4·4	−5·1
64 D	805	Palasgarh ...	20 39 0	80 17 10	1200	20 4 05	+0 47·2	+0 36·5	−0 15·4	−2·9	−4·4	−5·1
	806	Kosemi ...	20 23 40	80 34 10	1200	23 4 05	+0 52·0	+0 40·6	−0 11·9	−3·1	−4·5	−5·1
	807	Damkassa ...	20 20 30	80 56 10	1400	25 4 05	+0 39·5	+0 27·7	−0 25·4	−3·2	−4·6	−5·1
	1041	Garhchirolī ...	20 11 0	80 0 40	800	15 1 07	+0 47·2	+0 41·3	−0 10·6	−3·0	−4·4	−5·1
64 E	899	Bharatpur ...	23 44 5	81 46 10	1500	13 3 06	+1 13·5	+1 5·7	+0 12·7	−2·8	−4·5	−5·2
	762	Sahdol ...	23 17 0	81 21 50	1520	24 11 04	+1 9·6	+0 58·1	+0 5·1	−2·8	−4·5	−5·2
64 F	784	Dindori ...	22 57 0	81 4 10	2200	22 1 05	+1 22·8	+1 11·8	+0 19·9	−2·8	−4·4	−5·1
	761	Khairi ...	22 55 20	81 52 50	1800	23 4 08	+1 0·3	+0 58·2	+0 4·6	−3·0	−4·6	−5·2
	785	Mādhopur ...	22 45 40	81 25 20	2600	25 1 05	+1 4·2	+0 52·8	−0 0·2	−2·9	−4·5	−5·2
	788	Rajadhar ...	22 14 0	81 2 40	2200	10 2 05	+1 10·9	+0 59·6	+0 7·1	−2·9	−4·5	−5·1
	787	Kamardhā ...	22 0 20	81 13 40	1100	7 2 05	+1 13·6	+1 1·9	+0 9·4	−3·0	−4·5	−5·1
64 G	764	Bhātāpāra ...	21 44 0	81 56 30	890	29 11 04	+0 53·8	+0 40·7	−0 12·9	−3·2	−4·6	−5·2
	786	Bemetara ...	21 43 0	81 31 40	900	3 2 05	+0 59·0	+0 46·9	−0 6·2	−3·1	−4·6	−5·1
	LXIII	RAIPUR ...	21 15 50	81 38 20	970	9 3 20	−0 11·0	+0 43·2	−0 10·9	−3·2	−4·6	−5·1
	768	Rāj-Nāndgaon ...	21 6 10	81 2 20	1010	8 12 04	+1 0·1	+0 47·5	−0 5·0	−3·1	−4·5	−5·1
64 H	766	Rājim ...	20 58 30	81 52 10	800	4 12 04	+0 54·0	+0 40·6	−0 13·6	−3·3	−4·7	−5·2
	767	Dhamtari ...	20 42 40	81 32 40	1050	9 12 09	+0 33·1	+0 37·4	−0 15·7	−3·2	−4·6	−5·1
	942	Sihoa ...	20 18 40	81 54 40	1420	12 12 09	+0 40·5	+0 45·0	−0 9·2	−3·4	−4·7	−5·2
	808	Kānker ...	20 16 10	81 29 50	1300	28 4 05	+0 40·0	+0 27·9	−0 25·8	−3·3	−4·7	−5·1
64 I	898	Goini ...	23 48 0	82 19 20	1500	9 3 06	+1 22·8	+1 14·7	−0 20·5	−2·9	−4·7	−5·2
	900	Ninguani ...	23 18 50	82 0 30	1850	17 3 06	+1 16·0	+1 7·9	−0 14·3	−2·9	−4·6	−5·2
	901	Baikunthpur ...	23 16 20	82 33 0	1700	22 3 06	+1 8·8	+1 0·2	−0 6·0	−3·1	−4·7	−5·2
64 J	902	Matin ...	22 43 50	82 25 0	1500	27 3 06	+1 10·0	+1 1·4	+0 7·2	−3·1	−4·7	−5·2
	760	Belghana ...	22 25 50	82 2 20	1090	19 11 04	+0 52·5	+0 39·7	−0 13·9	−3·1	−4·6	−5·2
	903	Korba ...	22 20 30	82 42 30	900	31 3 06	+0 57·7	+0 48·6	−0 5·6	−3·3	−4·7	−5·2
	759	Akaltara ...	22 2 10	82 25 40	920	17 11 04	+1 6·3	+0 53·1	−0 1·1	−3·2	−4·7	−5·2
64 K	1038	Pithora ...	21 15 20	82 31 10	1000	28 12 06	+0 49·5	+0 42·7	−0 12·1	−3·4	−4·8	−5·2
	1039	Tumgaon ...	21 11 40	82 7 20	900	31 12 06	+0 45·7	+0 39·1	−0 15·1	−3·3	−4·7	−5·2
64 L	1036	Nawapara ...	20 48 40	82 31 50	900	19 12 06	+0 38·3	+0 31·2	−0 23·6	−3·5	−4·8	−5·2
	1035	Khariar ...	20 17 44	82 46 0	1100	14 12 06	+0 23·1	+0 15·7	−0 39·7	−3·6	−4·9	−5·2
64 M	907	Champa ...	23 13 0	83 45 10	2900	17 4 06	+1 14·8	+1 5·9	−0 10·0	−3·3	−4·9	−5·3
	909	Bisrāmpur ...	23 6 30	83 12 10	1950	24 4 06	+1 12·0	+1 3·4	−0 8·1	−3·2	−4·8	−5·3
64 N	908	Kalnai ...	22 46 30	83 30 20	1900	21 4 06	+1 8·2	+0 59·0	+0 3·1	−3·4	−4·9	−5·3
	904	Dharmjaygarh ...	22 28 10	83 13 20	900	3 4 06	+1 2·3	+0 53·3	−0 2·0	−3·3	−4·8	−5·3
	905	Sikirma ...	22 26 40	83 56 20	1000	9 4 06	+1 2·5	+0 53·0	−0 2·9	−3·5	−4·9	−5·3
64 O	758	Kharsia ...	21 59 40	83 6 20	840	15 11 04	+1 4·8	+0 50·8	−0 4·0	−3·4	−4·8	−5·2
	757	Kanika ...	21 52 30	83 44 20	880	12 11 04	+1 5·1	+0 50·6	−0 5·3	−3·5	−4·9	−5·3
	XI	SAMBALPUR ...	21 27 52	83 58 35	500	5 3 20	−0 13·1	+0 44·3	−0 12·2	−3·7	−5·0	−5·3
	1037	Saraipali ...	21 18 20	83 0 30	900	25 12 06	+1 2·1	+0 55·0	−0 0·2	−3·5	−4·8	−5·2
	1033	Chakerkend ...	21 18 10	83 30 30	600	6 12 06	+0 47·6	+0 40·2	−0 15·7	−3·6	−4·9	−5·3
64 P	938	Sonpur ...	20 50 40	83 54 30	370	23 11 05	+0 47·1	+0 35·3	−0 21·2	−3·8	−5·0	−5·3
	1034	Patnā ...	20 42 20	83 8 20	800	10 12 06	+0 45·5	+0 38·1	−0 17·3	−3·6	−4·9	−5·2
65 A	1042	Jaroundee ...	19 59 40	80 26 20	1000	19 1 07	+0 38·2	+0 32·2	−0 20·3	−3·1	−4·5	−5·1
	1044	Koilibeda ...	19 57 40	80 59 0	1200	26 1 07	+0 36·3	+0 30·1	−0 23·0	−3·2	−4·6	−5·1
	1043	Parlakot ...	19 47 0	80 41 10	1000	22 1 07	+0 32·4	+0 26·2	−0 26·9	−3·2	−4·6	−5·1
	1055	Kumargura ...	19 26 30	80 32 30	700	17 3 07	+0 35·3	+0 29·6	−0 23·5	−3·2	−4·6	−5·1
65 B	1054	Matimurka ...	18 59 30	80 16 50	360	11 3 07	+0 32·4	+0 26·6	−0 26·5	−3·2	−4·6	−5·1
	1050	Vijapur ...	18 47 20	80 49 0	1000	22 2 07	+0 22·9	+0 16·6	−0 37·6	−3·4	−4·7	−5·2
	1053	Madder ...	18 46 20	80 33 10	410	6 3 07	+0 34·9	+0 28·9	−0 24·8	−3·3	−4·7	−5·1
	721	Lankalagada ...	18 40 58	80 7 10	400	14 1 05	+0 32·0	+0 18·9	−0 34·2	−3·3	−4·6	−5·1
	1051	Pothikal ...	18 32 30	80 54 0	400	25 2 07	+0 19·6	+0 13·1	−0 41·1	−3·5	−4·7	−5·2
	722	Nagaram ...	18 20 50	80 25 40	350	17 1 05	+0 42·1	+0 28·6	−0 25·1	−3·4	−4·7	−5·1
	723	Biaram ...	18 3 13	80 44 20	300	22 1 05	+0 36·7	+0 22·9	−0 31·9	−3·5	−4·8	−5·2
65 C	724	Burgampol ...	17 38 25	80 52 10	400	25 1 05	+0 27·7	+0 13·5	−0 41·3	−3·6	−4·8	−5·2
	382	Mānu-ota ...	17 36 0	80 0 10	500	4 12 03	+1 10·4	+0 53·1	−0 1·1	−3·4	−4·7	−5·2
	383	Bonakālu ...	17 2 0	80 15 50	300	5 12 03	+0 2·4	−0 15·9	−1 10·7	−3·6	−4·8	−5·2
65 D	XLVIII	BEZWĀDA ...	16 31 0	80 36 50	70	19 2 20	−1 17·4	−0 21·3	−1 16·7	−3·9	−4·9	−5·2
	708	Phirangipuram ...	16 17 50	80 15 40	100	12 12 04	−0 12·1	−0 27·5	−1 22·9	−3·8	−4·9	−5·2

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
65 E	1045	Narainpur ...	19 43 10	81 14 50	1800	29 1 07	+0 43·9	+0 37·5	−0 16·2	−3·3	−4·7	−5·1
	1046	Kondagaon ...	19 35 10	81 40 10	1800	2 2 07	+0 31·8	+0 25·1	−0 29·7	−3·5	−4·8	−5·2
	1048	Barsur ...	19 8 10	81 23 20	1000	16 2 07	+0 22·7	+0 16·1	−0 38·7	−3·5	−4·8	−5·2
	1049	Bhairamgarh ...	19 0 30	81 2 40	1000	19 2 07	+0 24·1	+0 17·8	−0 36·4	−3·4	−4·7	−5·2
65 F	1047	Kinepal ...	18 58 36	81 36 40	1800	13 2 07	+0 28·1	+0 21·3	−0 33·5	−3·6	−4·8	−5·2
	955	Thakawada ...	18 44 30	81 48 30	1000	7 4 06	+0 26·3	+0 16·2	−0 39·2	−3·7	−4·9	−5·2
	957	Malkanagiri ...	18 21 50	81 53 30	700	15 4 06	+0 23·2	+0 12·9	−0 42·5	−3·8	−4·9	−5·2
	1052	Chintulnar ...	18 20 50	81 11 10	700	1 3 07	+0 34·0	+0 27·4	−0 27·4	−3·6	−4·8	−5·2
65 G	958	Pusigudiam ...	17 53 0	81 31 10	300	22 4 06	+0 23·6	+0 13·4	−0 42·0	−3·8	−4·9	−5·2
	725	Dummapett ...	17 17 17	81 0 10	200	27 1 05	+0 13·6	−0 1·3	−0 56·7	−3·8	−4·9	−5·2
	705	Rājahmundry ...	17 0 35	81 46 20	50	3 12 04	+0 21·8	+0 5·5	−0 50·5	−4·0	−5·0	−5·2
65 H	706	Bhīmadōl ...	16 48 40	81 15 30	40	5 12 04	+0 13·2	−0 2·7	−0 58·7	−3·9	−5·0	−5·2
	707	Masulipatam ...	16 11 30	81 7 40	0	8 12 04	+0 9·4	−0 7·3	−1 3·3	−4·1	−5·0	−5·2
65 I	943	Raigarh ...	19 53 20	82 4 20	2150	15 12 09	+0 38·7	+0 43·3	−0 11·5	−3·5	−4·8	−5·2
	952	Junāgarh ...	19 51 53	82 56 10	700	25 3 06	+0 20·5	+0 10·3	−0 45·1	−3·7	−4·9	−5·2
	953	Jamgaon or Jaipatna ...	19 28 10	82 48 20	1200	27 3 06	+0 24·1	+0 13·6	−0 41·8	−3·8	−4·9	−5·2
	944	Dabgaon ...	19 27 0	82 24 40	1940	18 12 09	+0 16·5	+0 21·2	−0 34·2	−3·7	−4·9	−5·2
	954	Jagdalpur ...	19 5 40	82 1 40	1830	2 4 06	+0 36·8	+0 26·6	−0 28·8	−3·7	−4·9	−5·2
65 J	945	Jeypore ...	18 51 34	82 34 40	1940	21 12 09	+0 18·9	+0 23·8	−0 32·2	−3·8	−5·0	−5·2
	956	Govindpili ...	18 34 50	82 17 0	900	12 4 06	+0 29·3	+0 19·0	−0 36·4	−3·8	−4·9	−5·2
	946	Padwa ...	18 22 20	82 40 40	3000	3 3 06	+0 18·0	+0 6·7	−0 49·3	−4·0	−5·0	−5·2
65 K	1058	Kodasanta ...	17 46 3	82 33 40	500	6 4 07	+0 51·9	+0 45·0	−0 11·0	−4·0	−5·0	−5·2
	703	Tuni ...	17 21 30	82 32 10	60	29 11 04	+0 17·8	+0 1·0	−0 55·6	−4·1	−5·1	−5·2
65 L	704	Cocanāda (Port) ...	16 56 20	82 14 10	10	1 12 04	+0 14·0	−0 2·7	−0 59·3	−4·1	−5 1	−5·2
65 M	951	Dadpur ...	19 58 40	83 14 10	850	21 3 06	+0 30·2	+0 19·7	−0 36·3	−3·8	−5·0	−5·2
	950	Tikirapara ...	19 37 40	83 29 20	2500	18 3 06	+0 33·2	+0 22·3	−0 34·2	−3·9	−5·0	−5·3
	1061	Sirgudi ...	19 25 20	83 49 0	700	19 4 07	+0 31·1	+0 24·3	−0 32·8	−4·0	−5·1	−5·3
	949	Rāyagada ...	19 9 50	83 24 40	200	14 3 06	+0 25·4	+0 14·2	−0 42·3	−4·0	−5·0	−5·3
	1060	Jugganatpoorum ...	19 1 50	83 46 30	280	15 4 07	+0 29·5	+0 22·7	−0 34·4	−4·0	−5·1	−5·3
65 N	948	Bobbili ...	18 34 30	83 21 10	400	30 12 09	+0 9·7	+0 14·8	−0 42·3	−4·1	−5·1	−5·3
	701	Chicacole Road ...	18 24 30	83 54 20	100	24 11 04	+0 30·2	+0 13·0	−0 44·7	−4·2	−5·2	−5·3
	947	Raiawalsa ...	18 13 50	83 1 30	3000	7 3 06	+0 41·0	+0 29·5	−0 27·6	−4·1	−5·1	−5·3
	702	Vizianagram ...	18 6 40	83 24 0	200	31 12 09	−0 23·2	−0 18·1	−1 15·2	−4·1	−5·1	−5·3
65 O	XII	WALTAIR ...	17 42 23	83 17 44	10	22 2 20	−0 44·1	+0 14·5	−0 43·3	−4·2	−5·1	−5·3
66 A	385	Bāpatla ...	15 54 30	80 27 40	30	8 12 03	+0 38·5	+0 18·2	−0 37·2	−4·0	−4·9	−5·2
	386	Ongole ...	15 30 20	80 3 20	40	10 12 03	+2 7·8	+1 47·6	+0 52·2	−4·0	−4·9	−5·2
66 C	388	Arambakkam ...	13 32 40	80 4 30	40	13 12 03	−0 19·1	−0 41·3	−1 39·0	−4·4	−5·2	−5·3
	XXXVII	PERAMBŪR ...	13 6 40	80 15 0	10	5 2 20	−1 36·1	−0 37·9	−1 35·6	−4·5	−5·2	−5·3
67 C	1375	Jaffna ...	9 39 25	80 0 40	10	27 2 13	−1 34·3	−1 10·6	−2 12·3	−5·1	−5·7	−5·5
	1376	Elephant Pass ...	9 31 17	80 24 20	10	28 2 13	−1 44·6	−1 20·1	−2 22·5	−5·2	−5·9	−5·4
	1373	Mullaittivu ...	9 16 13	80 48 50	10	25 2 13	−1 47·0	−1 21·7	−2 25·3	−5·3	−6·1	−5·4
	1374	Mankulam ...	9 7 39	80 27 0	170	26 2 13	−1 36·1	−1 11·1	−2 14·1	−5·3	−6·0	−5·4
67 D	1372	Vavuniya ...	8 45 30	80 30 20	290	24 2 13	−1 31·6	−1 6·3	−2 9·9	−5·4	−6·1	−5·4
	1367	Horowupotana ...	8 33 10	80 49 50	290	18 2 13	−1 43·6	−1 18·0	−2 22·2	−5·4	−6·2	−5·4
	1366	Anuradhapura ...	8 21 10	80 23 10	280	16 2 13	−2 0·7	−1 35·5	−2 39·1	−5·4	−6·1	−5·4
	1369	Aluttoya ...	8 13 15	80 54 0	300	20 2 13	−1 54·0	−1 27·9	−2 32·2	−5·5	−6·3	−5·3
	1395	Kekirawa ...	8 2 8	80 36 20	450	1 4 13	−1 58·8	−1 32·0	−2 36·8	−5·5	−6·3	−5·4
	1365	Galgamuwa ...	8 0 50	80 16 0	280	15 2 13	−1 51·3	−1 25·7	−2 29·9	−5·4	−6·2	−5·4
67 H	1368	Trincomalee ...	8 34 40	81 14 10	0	18 2 13	−1 53·9	−1 27·4	−2 32·3	−5·5	−6·4	−5·3
68 A	1371	Dambulla ...	7 52 40	80 39 20	530	22 2 13	+0 10·1	+0 36·2	−0 28·1	−5·5	−6·3	−5·3
	1396	Nālanda ...	7 40 10	80 38 20	830	2 4 13	−2 3·1	−1 35·8	−2 40·7	−5·6	−6·4	−5·3
	1364	Kurunegala ...	7 28 50	80 21 50	400	14 2 13	−2 6·5	−1 40·5	−2 45·3	−5·5	−6·3	−5·4
	1397	Nugatenni ...	7 18 0	80 51 20	2910	2 4 13	−1 58·5	−1 30·8	−2 36·3	−5·7	−6·5	−5·3
	1382	Kandy ...	7 17 40	80 37 40	1680	13 3 13	−2 19·8	−1 52·9	−2 57·8	−5·6	−6·4	−5·3
	1362	Yatiyantota ...	7 2 0	80 17 20	110	9 2 13	−2 0·3	−1 34·0	−2 38·9	−5·6	−6·4	−5·3
68 B	1383	Nuwara Eliya ...	6 57 39	80 46 20	6190	15 3 13	−2 3·9	−1 36·5	−2 42·0	−5·7	−6·5	−5·3
	1384	Haputale. ...	6 46 0	80 57 50	4730	20 3 13	−2 3·1	−1 35·2	−2 41·3	−5·8	−6·6	−5·3
	1363	Ratnapura ...	6 41 40	80 24 20	100	10 2 13	−2 4·0	−1 37·3	−2 42·8	−5·7	−6·5	−5·3
	1357	Bentota ...	6 25 50	80 0 10	10	2 2 13	−2 7·7	−1 41·5	−2 46·4	−5·6	−6·4	−5·3
	1360	Deniyaya ...	6 21 20	80 33 40	1360	5 2 13	−2 11·6	−1 44·5	−2 50·6	−5·7	−6·6	−5·3
	LXXV	GALLE ...	6 1 50	80 12 10	10	24 1 20	−2 55·9	−1 50·0	−2 55·5	−5·7	−6·5	−5·3
68 C	1359	Matara ...	5 57 50	80 33 10	10	4 2 13	−2 10·5	−1 43·5	−2 49·6	−5·8	−6·6	−5·3
68 E	1370	Topa Wewa ...	7 56 37	81 0 10	300	21 2 13	−1 58·1	−1 31·6	−2 36·5	−5·6	−6·4	−5·3

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
68 E	1393	Kalcudah ...	7 55 20	81 34 50	10	28 3 13	−2 1·2	−1 33·2	−2 39·3	−5·7	−6·6	−5·3
	1389	Batticaloa ...	7 42 31	81 42 40	10	25 3 13	−1 56·7	−1 28·3	−2 35·0	−5·8	−6·7	−5·3
	1394	Mahaoya ...	7 32 4	81 21 20	200	29 3 13	−1 56·5	−1 28·4	−2 34·5	−5·7	−6·6	−5·3
	1392	Kalmunai ...	7 24 50	81 50 40	10	27 3 13	−2 0·4	−1 31·6	−2 38·9	−5·8	−6·8	−5·3
	1388	Bibile ...	7 9 28	81 14 10	800	24 3 13	−2 3·8	−1 35·4	−2 42·1	−5·8	−6·7	−5·3
	1391	Tirukovil ...	7 7 50	81 52 10	10	27 3 13	−2 8·0	−1 38·7	−2 46·1	−6·0	−6·9	−5·2
68 F	1390	Pottuvil ...	6 52 30	81 50 30	10	26 3 13	−2 2·9	−1 33·6	−2 41·0	−6·0	−6·9	−5·2
	1387	Muppane ...	6 51 50	81 21 30	490	23 3 13	−2 31·3	−2 2·5	−3 9·8	−5·9	−6·8	−5·3
	1385	Tanamalwila ...	6 25 52	81 8 10	230	21 3 13	−2 9·5	−1 40·8	−2 48·1	−5·9	−6·8	−5·3
	1386	Kirinde ...	6 13 9	81 20 50	20	22 3 13	−2 12·8	−1 43·6	−2 51·5	−6·0	−6·9	−5·3
	1361	Ambalantota ...	6 7 14	81 1 40	10	6 2 13	−2 9·4	−1 41·5	−2 48·8	−6·0	−6·8	−5·3
72 B	LIII	BETTIAH ...	26 48 50	84 31 30	240	7 11 19	+0 49·8	+1 45·5	+0 49·0	−2·9	−5·0	−5·3
	529	Pipra ...	26 29 30	84 59 10	200	21 4 04	+2 13·0	+1 58·5	+1 1·4	−3·1	−5·1	−5·3
	526	Siwān ...	26 12 30	84 20 40	200	15 4 04	+1 43·6	+1 29·5	+0 33·0	−3·0	−5·0	−5·3
72 C	999	Ekma ...	25 58 10	84 32 10	200	7 11 06	+1 5·3	+0 58·6	+0 2·1	−3·1	−5·0	−5·3
	527	Chāprā ...	25 48 10	84 43 20	200	2 2 11	+0 18·8	+0 29·4	−0 27·7	−3·1	−5·1	−5·3
	997 (*a*)	Ballia ...	25 45 10	84 10 10	200	20 2 11	+0 52·4	+1 3·1	+0 6·6	−3·0	−5·0	−5·3
	960	Dumraon ...	25 34 40	84 7 30	260	6 12 10	+0 4·8	+0 14·5	−0 42·0	−3·0	−5·0	−5·3
	1064	Arrah ...	25 33 0	84 40 20	190	3 11 06	+1 28·9	+1 22·2	+0 25·1	−3·1	−5·1	−5·3
	1063	Ghoorsaree ...	25 22 30	84 9 10	220	1 11 06	+1 0·5	+0 53·8	−0 2·7	−3·1	−5·0	−5·3
	511	Jahānābād ...	25 13 40	84 59 50	220	13 3 04	+1 33·8	+1 18·0	+0 20·4	−3·3	−5·1	−5·4
72 D	487	Palmerganj ...	24 51 40	84 19 50	300	28 11 03	+1 27·6	+1 11·3	+0 14·3	−3·2	−5·0	−5·4
	XIV	GAYĀ ...	24 47 7	84 59 47	400	3 11 19	+0 14·1	+1 10·8	+0 13·2	−3·3	−5·1	−5·4
	881	Imāmganj ...	24 27 20	84 34 50	600	15 12 05	+1 13·7	+1 3·7	+0 6·1	−3·3	−5·1	−5·4
	882	Chatrā ...	24 12 10	84 53 0	1400	19 12 05	+1 26·5	+1 16·2	+0 18·6	−3·4	−5·1	−5·4
	486 (*a*)	Daltonganj ...	24 2 10	84 3 40	700	20 3 09	+1 17·8	+1 18·9	+0 22·4	−3·3	−5·0	−5·3
72 F	531	Bairagnia ...	26 43 50	85 16 30	280	25 4 04	+1 51·9	+1 37·4	+0 40·3	−3·1	−5·1	−5·3
	528	Muzaffarpur ...	26 6 30	85 22 30	170	19 4 04	+1 45·9	+1 30·9	+0 33·8	−3·2	−5·1	−5·3
	534	Darbhangā ...	26 6 0	85 54 20	170	2 5 04	+1 41·7	+1 26·3	+0 28·6	−3·3	−5·2	−5·3
72 G	998	Dighwāra ...	25 44 30	85 0 40	170	5 11 06	+1 22·0	+1 15·1	+0 18·0	−3·2	−5·1	−5·3
	510	Patna ...	25 35 30	85 12 20	170	11 3 04	+1 35·8	+1 20·4	+0 22·8	−3·2	−5·1	−5·4
	509	Bārh ...	25 28 20	85 42 50	150	10 3 04	+1 44·1	+1 28·2	+0 29·4	−3·3	−5·3	−5·4
72 H	488	Nawāda ...	24 52 30	85 32 50	500	30 11 03	+1 29·4	+1 12·1	+0 13·9	−3·4	−5·2	−5·4
	877	Ganwan ...	24 37 10	85 55 20	700	21 11 05	+1 41·4	+1 30·5	+0 31·2	−3·5	−5·3	−5·5
	880	Chorpāran ...	24 22 30	85 15 40	1340	11 12 05	+1 17·3	+1 6·9	+0 8·7	−3·4	−5·2	−5·4
	878	Bagodar ...	24 4 50	85 49 30	1250	25 11 05	+1 19·6	+1 8·4	+0 9·7	−3·6	−5·2	−5·5
72 J	533	Nirmali ...	26 18 0	86 34 0	180	30 4 04	+1 51·8	+1 36·4	+0 37·0	−3·3	−5·4	−5·4
72 K	844	Madhipurā ...	25 55 40	86 47 30	140	27 1 06	+1 31·3	+1 21·4	+0 21·4	−3·4	−5·5	−5·4
	L	MONGHYR ...	25 23 10	86 27 50	150	11 11 19	+0 22·1	+1 21·3	+0 21·3	−3·5	−5·5	−5·4
	490	Bhāgalpur ...	25 14 0	86 57 40	150	4 12 03	+1 23·4	+1 5·1	+0 5·1	−3·6	−5·5	−5·4
72 L	508	Gidhaur ...	24 52 20	86 18 0	900	23 1 04	+1 35·9	+1 18·6	+0 18·7	−3·5	−5·4	−5·5
	507	Baidyanāth ...	24 30 50	86 38 0	1000	21 1 04	+1 34·4	+1 16·6	+0 16·1	−3·6	−5·5	−5·5
	876	Deogarh ...	24 29 0	86 41 0	1000	15 11 05	+1 25·1	+1 13·5	+0 13·0	−3·7	−5·5	−5·5
	506	Giridih ...	24 10 50	86 19 20	1000	30 3 11	+0 54·1	+1 6·3	+0 6·4	−3·7	−5·4	−5·5
72 N	532	Khanwaghat ...	26 22 10	87 3 20	180	27 4 04	+1 33·5	+1 17·6	+0 18·1	−3·4	−5·5	−5·3
	842	Kishanganj ...	26 5 50	87 56 50	100	22 1 06	+1 36·6	+1 26·0	+0 25·4	−3·6	−5·6	−5·4
72 O	843	Purnea ...	25 46 30	87 31 10	120	25 1 06	+1 22·2	+1 11·9	+0 11·3	−3·5	−5·6	−5·4
	841	Bārsoi ...	25 38 50	87 55 40	110	20 1 06	+1 35·2	+1 24·6	+0 24·0	−3·6	−5·6	−5·4
	491	Sāhibganj ...	25 14 50	87 38 20	110	6 12 03	+1 28·7	+1 10·0	+0 9·4	−3·7	−5·6	−5·4
72 P	875	Goddā ...	24 50 20	87 12 30	1000	12 11 05	+1 8·3	+0 56·7	−0 4·4	−3·7	−5·6	−5·5
	492	Pākaur ...	24 38 50	87 51 40	100	8 12 03	+1 27·5	+1 8·2	+0 7·1	−3·8	−5·6	−5·5
	874	Dumkā ...	24 15 45	87 14 40	1000	19 2 11	+1 10·7	+1 22·4	+0 21·9	−3·8	−5·5	−5·5
73 A	883	Balumath ...	23 50 10	84 47 40	1600	22 12 05	+1 17·2	+1 6·9	+0 9·3	−3·4	−5·1	−5·4
	885	Lātehār ...	23 45 10	84 29 50	1240	29 12 05	+1 21·7	+1 11·5	+0 14·5	−3·4	−5·0	−5·4
	884	Lohārdagā ...	23 25 30	84 41 10	2200	25 12 05	+1 15·3	+1 4·7	+0 7·1	−3·5	−5·1	−5·4
73 B	906	Jashpur ...	22 52 40	84 8 30	2570	12 4 06	+1 4·3	+0 54·8	−0 1·7	−3·5	−5·0	−5·3
	1032	Kolebira ...	22 42 20	84 42 0	1900	25 11 06	+1 6·0	+0 58·4	+0 1·9	−3·6	−5·0	−5·3
	755	Rourkela ...	22 13 40	84 51 30	650	9 11 04	+0 53·1	+0 37·8	−0 19·3	−3·7	−5·1	−5·3
	756	Bāmrā ...	22 3 30	84 17 30	860	11 11 04	+1 8·9	+0 54·0	−0 2·5	−3·6	−5·0	−5·3
73 C	1166	Bonaigarh ...	21 49 0	84 57 30	500	17 12 07	+0 24·8	+0 20·8	−0 36·3	−3·8	−5·1	−5·3
	1165	Boraghat ...	21 31 35	84 33 30	800	11 12 07	+0 59·2	+0 55·2	−0 1·3	−3·8	−5·0	−5·3
	937	Charmal ...	21 6 20	84 12 50	500	18 11 05	+0 52·5	+0 40·7	−0 15·8	−3·8	−5·0	−5·3
73 D	936	Hondipa ...	20 56 30	84 42 10	400	14 11 05	+0 55·8	+0 43·6	−0 13·5	−3·9	−5·1	−5·3
	939	Bisapara ...	20 24 50	84 12 30	1600	30 11 05	+0 48·6	+0 36·6	−0 20·5	−3·9	−5·1	−5·3
	941	Daspallā ...	20 18 40	84 54 0	400	9 12 05	+0 48·2	+0 36·0	−0 21·1	−4·0	−5·1	−5·3
	940	Mojagodo ...	20 1 10	84 31 0	400	4 12 05	+0 43·0	+0 30·7	−0 26·4	−4·0	−5·1	−5·3

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
73 E	879	Hazāribāgh ...	23 59 40	85 22 10	2000	28 11 05	+1 16·3	+1 5·5	+0 7·3	−3·5	−5·2	−5·4
	1030	Rānchī ...	23 22 40	85 19 30	2160	17 11 06	+1 25·1	+1 17·4	+0 19·8	−3·6	−5·1	−5·4
	1029	Silli ...	23 21 10	85 50 40	880	13 11 06	+1 13·8	+1 5·9	+0 7·7	−3·7	−5·2	−5·4
	1031	Jeria ...	23 2 40	85 1 0	2100	22 11 06	+0 58·9	+0 51·3	−0 6·3	−3·6	−5·1	−5·4
73 F	LI	SINI ...	22 47 0	85 56 50	700	1 3 20	+0 1·4	+1 0·5	+0 2·3	−3·8	−5·2	−5·4
	1178	Chaibāsa ...	22 32 30	85 48 30	750	14 1 08	+1 10·4	+1 6·7	+0 8·5	−3·8	−5·2	−5·4
	754	Goilkera ...	22 30 20	85 21 30	1000	6 11 04	+1 12·0	+0 56·2	−0 1·4	−3·8	−5·1	−5·4
	1172	Jaintigarh ...	22 4 10	85 40 40	1230	10 1 08	+1 4·1	+1 0·3	+0 2·7	−3·9	−5·1	−5·4
73 G	1171	Keonjhar ...	21 37 40	85 35 30	1200	6 1 08	+0 48·4	+0 44·6	−0 13·0	−3·9	−5·1	−5·4
	1167	Pāl Laharā ...	21 25 50	85 11 30	700	21 12 07	+0 30·5	+0 26·5	−0 31·1	−3·9	−5·1	−5·4
	1170	Gutgaon ...	21 24 10	85 53 20	500	2 1 08	+0 53·4	+0 49·4	−0 8·8	−4·0	−5·2	−5·4
	1169	Kantolo ...	21 7 20	85 37 40	600	30 12 07	+0 46·3	+0 42·3	−0 15·9	−4·0	−5·2	−5·4
73 H	1168	Tālcher ...	20 57 10	85 14 30	200	25 12 07	+0 58·3	+0 54·2	−0 3·4	−4·0	−5·1	−5·4
	935	Rasul ...	20 37 20	85 19 10	400	10 11 05	+1 3·4	+0 50·8	−0 7·4	−4·0	−5·2	−5·4
	695	Cuttack ...	20 27 20	85 53 50	90	13 11 04	+0 12·9	−0 4·0	−1 2·2	−4·1	−5·2	−5·4
	697	Tāpang ...	20 3 20	85 34 50	50	16 11 04	+0 46·3	+0 29·0	−0 29·3	−4·2	−5·2	−5·4
73 I	873	Jāmtāra ...	23 58 40	86 48 50	700	2 3 11	+0 58·9	+1 10·8	+0 10·3	−3·7	−5·5	−5·5
	505	Kātrāsgarh ...	23 48 0	86 18 0	800	3 12 10	+0 57·6	+1 7·8	+0 8·5	−3·7	−5·3	−5·5
	501	Purūlia ...	23 19 30	86 22 50	800	5 1 04	+1 29·1	+1 10·2	+0 10·9	−3·8	−5·3	−5·5
73 J	499	Ghātsila ...	22 35 0	86 28 20	400	1 1 04	+1 18·2	+0 58·7	−0 0·6	−3·9	−5·3	−5·5
	1174	Rairangpur ...	22 15 21	86 11 0	1000	18 1 08	+0 57·5	+0 53·8	−0 4·4	−3·9	−5·2	−5·4
73 K	1176	Baripādā ...	21 55 50	86 43 0	200	29 1 08	+0 30·6	+0 26·9	−0 32·4	−4·0	−5·3	−5·5
	1175	Kusmi ...	21 50 0	86 15 10	1500	24 1 08	+0 16·6	+0 12·9	−0 45·8	−4·0	−5·2	−5·5
	LIX	BALASORE ...	21 30 30	86 54 40	50	27 2 20	−0 21·7	+0 38·5	−0 20·8	−4·1	−5·3	−5·5
	693	Bhadrakh ...	21 5 10	86 31 0	50	10 11 04	+0 47·9	+0 30·9	−0 28·4	−4·1	−5·3	−5·5
73 L	694	Jenapur ...	20 51 30	86 4 10	100	11 11 04	+0 54·4	+0 37·4	−0 20·8	−4·1	−5·2	−5·4
	1180	Chāndbali ...	20 46 10	86 43 40	20	17 2 08	+0 20·1	+0 16·4	−0 42·4	−4·2	−5·3	−5·4
	1179	Balikuda ...	20 8 30	86 16 10	50	11 2 08	+0 28·8	+0 25·1	−0 33·7	−4·2	−5·3	−5·4
73 M	494	Sainthia ...	23 56 50	87 41 20	170	2 5 08	+1 6·0	+1 3·4	+0 2·3	−3·9	−5·6	−5·5
	504	Rāniganj ...	23 35 30	87 7 30	300	20 1 11	+0 55·9	+1 7·2	+0 6·7	−3·9	−5·5	−5·5
	495	Burdwān ...	23 15 0	87 52 40	100	16 12 03	+1 14·3	+0 54·1	−0 7·0	−4·0	−5·6	−5·5
	502	Bānkurā ...	23 13 30	87 4 10	400	11 1 04	+1 28·9	+1 9·5	+0 9·0	−3·9	−5·5	−5·5
73 N	503	Garbeta ...	22 50 40	87 18 50	300	13 1 04	+0 51·5	+0 31·6	−0 28·9	−4·0	−5·5	−5·5
	498	Midnapore ...	22 25 20	87 17 30	200	30 12 03	+1 11·0	+0 50·5	−0 10·0	−4·1	−5·5	−5·5
73 O	1177	Dāntān ...	21 56 10	87 16 40	80	31 1 08	+0 54·4	+0 50·6	−0 9·3	−4·1	−5·4	−5·5
	1178	Contai ...	21 46 40	87 44 30	40	4 2 08	+0 43·7	+0 39·9	−0 20·6	−4·2	−5·5	−5·5
74 A	1062	Govindpur ...	19 29 50	84 25 20	300	29 4 07	+0 40·2	+0 33·3	−0 23·8	−4·1	−5·1	−5·3
	LX	BERHAMPUR (Ganjām) ...	19 18 10	84 48 40	80	24 2 20	−0 40·8	+0 17·8	−0 40·0	−4·2	−5·2	−5·3
74 B	1059	Parlakimedi ...	18 47 10	84 5 0	300	11 4 07	+0 25·5	+0 18·4	−0 38·7	−4·1	−5·1	−5·3
	700	Palasa ...	18 45 20	84 26 0	80	23 11 04	+0 31·6	+0 14·3	−0 43·4	−4·2	−5·2	−5·3
74 E	696	Purī ...	19 48 40	85 50 10	20	14 11 04	+0 42·9	+0 25·5	−0 32·7	−4·2	−5·2	−5·4
	698	Rambha ...	19 32 0	85 6 0	30	18 11 04	+0 30·2	+0 12·9	−0 44·8	−4·2	−5·2	−5·3
78 B	XIII	DARJEELING ...	26 59 42	88 16 56	8100	14 11 19	+0 33·4	+1 32·2	+0 32·7	−3·4	−5·5	−5·3
	839	Siliguri ...	26 42 20	88 26 10	390	16 1 06	+1 55·5	+1 45·1	+0 45·0	−3·5	−5·6	−5·3
	1601	Tariya ...	26 15 40	88 23 40	200	14 11 06	+1 33·2	+1 25·5	+0 24·9	−3·6	−5·6	−5·4
	838	Chulhāti ...	26 14 30	88 48 10	210	14 1 06	+1 41·1	+1 30·4	+0 29·8	−3·6	−5·6	−5·4
78 C	1090	Ranisankail ...	25 54 8	88 15 10	150	11 11 06	+1 33·0	+1 25·3	+0 24·7	−3·6	−5·6	−5·4
	836	Pārbatipur ...	25 39 10	88 55 10	110	12 12 08	+1 21·8	+1 21·6	+0 21·0	−3·7	−5·6	−5·4
	840	Radhikāpur ...	25 38 30	88 26 50	110	18 1 06	+1 28·3	+1 17·4	+0 16·8	−3·7	−5·6	−5·4
78 D	829	Bulbulchundi ...	24 58 50	88 14 30	100	23 12 05	+1 30·3	+1 18·8	+0 17·7	−3·8	−5·6	−5·5
	LXV	SANTAHAR ...	24 48 10	88 59 20	50	19 11 19	+0 20·8	+1 21·9	+0 20·2	−3·9	−5·7	−5·5
	828	Nawābganj ...	24 35 40	88 16 0	100	20 12 05	+1 40·1	+1 28·6	+0 27·5	−3·8	−5·6	−5·5
	830	Mālānchi ...	24 18 40	88 57 50	50	28 12 05	+1 4·6	+0 52·6	−0 9·1	−4·0	−5·7	−5·5
	493	Azimganj ...	24 14 10	88 15 10	100	10 12 03	+1 19·9	+1 0·2	−0 0·9	−3·9	−5·6	−5·5
78 F	845	Banarhat ...	26 47 30	89 1 20	400	1 2 06	+1 38·6	+1 28·4	+0 28·3	−3·5	−5·6	−5·3
	835	Jainti ...	26 41 24	89 36 30	500	8 1 06	+2 16·4	+2 6·0	+1 5·9	−3·5	−5·6	−5·3
	834	Cooch Behār ...	26 18 30	89 26 20	160	5 1 06	+1 44·0	+1 33·2	+0 32·0	−3·6	−5·7	−5·4
	846	Dhubrighāt ...	26 1 2	89 59 50	100	3 2 06	+1 22·0	+1 11·2	+0 10·0	−3·7	−5·7	−5·4
78 G	833	Kannia ...	25 47 10	89 25 0	100	3 1 06	+1 36·1	+1 25·0	+0 23·8	−3·7	−5·7	−5·4
	LXXVI	PHULCHARI ...	25 11 40	89 37 0	50	11 4 20	+0 13·1	+1 16·3	+0 14·6	−3·8	−5·7	−5·5
	837	Panchabibi ...	25 11 30	89 1 40	80	12 1 06	+1 38·1	+1 26·8	+0 25·1	−3·8	−5·7	−5·5

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
78 H	821	Jagannāthganj ...	24 41 10	89 45 50	40	3 12 05	+1 2·2	+0 50·2	−0 11·5	−3·9	−5·7	−5·5
	822	Porabari ...	24 13 17	89 51 30	30	5 12 05	+1 24·7	+1 12·4	+0 10·7	−4·0	−5·7	−5·5
78 J	1002	Cherpanguri ...	26 33 2	90 8 10	300	22 11 06	+1 29·3	+1 21·7	+0 21·0	−3·6	−5·7	−5·3
	1003	Bijni ...	26 28 50	90 42 10	300	30 11 06	+1 23·9	+1 16·4	+0 15·7	−3·6	−5·7	−5·3
	847	Goālpāra ...	26 11 10	90 37 40	140	6 2 06	+1 41·0	+1 30·3	+0 29·0	−3·7	−5·8	−5·3
78 K	1009	Rongrenggiri ...	25 33 0	90 33 20	2000	3 1 07	+1 9·8	+1 2·2	+0 0·4	−3·8	−5·8	−5·4
	1008	Nongsobal ...	25 32 8	90 52 50	1000	29 12 06	+1 37·1	+1 29·5	+0 27·7	−3·8	−5·8	−5·4
	1010	Damalgiri ...	25 31 40	90 6 50	500	9 1 07	+2 19·7	+2 12·2	+1 10·4	−3·8	−5·8	−5·4
	1011	Nalitābāri ...	25 5 10	90 11 10	50	14 1 07	+0 53·7	+0 46·2	−0 15·5	−3·8	−5·7	−5·5
78 L	1012	Asma ...	24 54 10	90 53 20	50	20 1 07	+1 15·4	+1 7·8	+0 5·5	−3·9	−5·8	−5·5
	820	Mymensingh ...	24 46 0	90 23 40	50	25 1 11	+1 5·6	+1 17·6	+0 15·3	−3·9	−5·8	−5·5
	819	Sripur ...	24 12 50	90 29 0	50	30 11 05	+1 19·0	+1 6·7	+0 5·0	−4·0	−5·7	−5·5
78 N	1005	Jiabor ...	26 43 33	91 42 30	400	8 12 06	+1 36·2	+1 28·8	+0 27·5	−3·6	−5·8	−5·3
	1004	Eatacharkuchi ...	26 30 40	91 14 10	170	4 12 06	+2 10·1	+2 2·6	+1 1·3	−3·6	−5·8	−5·3
	848	Kholabanda ...	26 10 0	91 8 16	130	8 2 06	+1 33·7	+1 23·0	+0 21·2	−3·7	−5·8	−5·4
	LXXVII	PALĀSBĀRI ...	26 7 40	91 32 40	150	18 4 20	+0 19·1	+1 23·1	+0 20·7	−3·7	−5·9	−5·4
78 O	863	Shillong ...	25 35 4	91 53 40	4900	23 3 06	+1 17·7	+1 7·2	+0 4·2	−3·8	−6·0	−5·4
	1007	Maokersa ...	25 31 10	91 25 0	5000	22 12 06	+1 10·6	+1 2·9	+0 0·5	−3·8	−5·9	−5·4
	1014	Sunāmganj ...	25 4 10	91 23 30	40	28 1 07	+1 21·6	+1 14·1	+0 11·2	−3·9	−5·9	−5·5
78 P	1015	Sylhet ...	24 53 0	91 52 0	40	1 2 07	+1 16·2	+1 8·7	+0 5·8	−3·9	−5·9	−5·5
	1013	Ajmiriganj or Abidābād	24 33 50	91 14 10	50	25 1 07	+1 16·7	+1 9·2	+0 6·9	−3·9	−5·8	−5·5
	868	Tilāgāon ...	24 26 40	91 57 30	50	11 4 06	+1 18·0	+1 7·1	+0 4·8	−4·0	−5·8	−5·5
	869	Shāistāganj ...	24 16 50	91 26 10	30	13 4 06	+1 15·9	+1 5·0	+0 2·7	−4·0	−5·8	−5·5
	1182	Singurajabari ...	24 7 57	91 53 50	900	19 3 08	+1 6·9	+1 3·8	+0 1·5	−4·0	−5·8	−5·5
79 A	827	Plassey ...	23 46 20	88 17 10	40	15 12 05	+0 54·2	+0 42·0	−0 19·1	−4·0	−5·6	−5·5
	825	Chuādānga ...	23 38 40	88 51 40	40	11 12 05	+1 18·2	+1 6·0	+0 4·9	−4·0	−5·6	−5·5
	826	Krishnagar ...	23 22 39	88 29 10	30	14 12 05	+1 24·6	+1 12·1	+0 11·0	−4·1	−5·6	−5·5
	811	Bangong ...	23 1 50	88 50 20	20	11 11 05	+1 11·6	+0 58·7	−0 1·9	−4·1	−5·6	−5·4
79 B	LXXIV	**BARRACKPORE** ...	22 46 29	88 21 39	20	13 3 20	+0 1·4	...	+0 2·5	...	...	−5·4
		BARRACKPORE OBSERVATORY ...	22 46 29	88 21 39	20	...	...	+1 2·7	...	−4·2	−5·6	...
	496	Calcutta ...	22 33 40	88 17 30	20	23 12 03	+1 21·3	+1 0·7	+0 0·1	−4·1	−5·6	−5·4
	497	Ulubāria ...	22 28 20	88 6 20	20	28 12 03	+1 6·0	+0 45·5	−0 15·1	−4·1	−5·6	−5·4
	810	Canning ...	22 18 20	88 39 50	10	8 11 05	+1 10·7	+0 57·5	−0 3·1	−4·2	−5·6	−5·4
	809	Diamond Harbour ...	22 11 20	88 11 40	10	6 11 05	+1 11·7	+0 58·5	−0 1·5	−4·2	−5·5	−5·4
79 E	824	Kumār Khāli ...	23 51 50	89 14 0	40	10 12 05	+1 17·6	+1 5·4	+0 3·7	−4·0	−5·7	−5·5
	823	Faridpur ...	23 37 10	89 51 10	20	7 12 05	+1 17·9	+1 5·3	+0 3·6	−4·1	−5·7	−5·5
	812	Jessore ...	23 9 50	89 12 40	20	13 11 05	+1 12·5	+0 59·7	−0 0·9	−4·1	−5·6	−5·4
79 F	813	Khulnā ...	22 49 0	89 33 20	0	14 11 05	+1 10·4	+0 57·2	−0 3·4	−4·2	−5·6	−5·4
	815	Morelganj ...	22 27 10	89 51 50	0	19 11 05	+1 4·1	+0 51·0	−0 9·6	−4·2	−5·6	−5·4
79 I	818	Dolāiganj ...	23 42 8	90 25 30	20	28 11 05	+1 11·6	+0 58·9	−0 2·8	−4·1	−5·7	−5·5
	816	Chāndpur ...	23 14 0	90 38 0	0	22 11 05	+1 10·5	+0 57·8	−0 3·4	−4·1	−5·7	−5·4
	817	Mādāripur ...	23 10 50	90 12 30	10	25 11 05	+1 11·0	+0 58·3	−0 2·9	−4·1	−5·7	−5·4
79 J	814	Barisāl ...	22 41 10	90 22 0	10	17 11 05	+1 5·2	+0 52·1	−0 9·1	−4·2	−5·7	−5·4
79M	870	Kamalasagar ...	23 44 40	91 9 10	30	16 4 06	+1 14·6	+1 3·5	+0 1·8	−4·1	−5·7	−5·5
	1181	Amarpur ...	23 31 58	91 39 30	200	8 3 08	+1 2·1	+0 58·8	−0 2·4	−4·1	−5·7	−5·4
	LXVI	LĀKSHĀM ...	23 15 40	91 7 20	30	6 4 20	−0 4·6	+0 58·0	−0 3·2	−4·1	−5·7	−5·4
	1184	Golabari ...	23 5 0	91 58 50	500	10 4 08	+0 59·6	+0 56·6	−0 4·6	−4·1	−5·7	−5·4
79 N	872	Noākhāli ...	22 48 20	91 6 30	20	20 4 06	+1 7·7	+0 56·4	−0 4·8	−4·2	−5·7	−5·4
	1028	Mirsarai ...	22 46 40	91 37 50	20	9 5 07	+1 2·6	+0 55·7	−0 5·5	−4·2	−5·7	−5·4
	1027	Bhatiyari ...	22 20 10	91 45 0	30	6 5 07	+1 0·9	+0 54·0	−0 6·7	−4·2	−5·7	−5·3
83 B	1006	Udalguri ...	26 45 50	92 6 50	300	12 12 06	+1 29·0	+1 21·6	+0 19·7	−3·6	−5·9	−5·3
	851	Tezpur ...	26 37 50	92 48 20	200	15 2 06	+1 12·2	+1 1·8	−0 0·7	−3·6	−6·0	−5·3
	850	Mangaldai ...	26 28 40	92 8 20	200	13 2 06	+1 41·6	+1 31·2	+0 29·3	−3·6	−5·9	−5·3
	861	Kāmpur ...	26 9 40	92 39 30	200	13 3 06	+1 27·2	+1 16·8	+0 14·3	−3·7	−6·0	−5·3
	862	Jagi Road ...	26 7 20	92 11 30	200	15 3 06	+1 36·2	+1 25·9	+0 23·4	−3·7	−6·0	−5·3
83 C	864	Shangpang ...	25 28 48	92 21 0	4500	27 3 06	+1 37·0	+1 26·5	+0 23·5	−3·8	−6·0	−5·4
	865	Korongma ...	25 26 8	92 43 30	3200	31 3 06	+1 15·4	+1 4·9	+0 1·9	−3·8	−6·0	−5·4
83 D	867	Karimganj ...	24 52 0	92 22 10	50	9 4 06	+1 22·6	+1 12·0	+0 9·1	−3·9	−5·9	−5·5
	XXI	SILCHAR ...	24 49 14	92 47 27	70	30 11 19	+0 6·8	+1 9·2	+0 6·3	−3·9	−5·9	−5·5
	1022	Kalosib ...	24 15 16	92 42 10	1900	29 3 07	+1 12·2	+1 5·2	+0 3·4	−4·0	−5·8	−5·4
83 F	852	Behally Mookh ...	26 46 19	93 21 50	250	22 2 06	+1 34·7	+1 24·7	+0 22·7	−3·5	−6·0	−5·2
	858	Oating ...	26 26 13	93 59 30	400	7 3 06	+1 46·3	+1 36·2	+0 34·2	−3·6	−6·0	−5·2

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915- 1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
83 G	859	Manipur Road ...	25 54 50	93 43 50	500	9 3 06	+1 13·5	+1 3·1	+0 0·6	−3·7	−6·0	−5·3
	860	Lumding ...	25 44 52	93 10 41	500	5 2 11	+1 2·4	+1 15·0	+0 12·5	−3·7	−6·0	−5·3
	866	Hāflang ...	25 11 29	93 1 10	2000	5 4 06	+1 32·5	+1 22·1	+0 19·1	−3·8	−6·0	−5·4
83 H	1020	Manipur ...	24 48 31	93 56 30	2600	6 3 07	+1 6·0	+0 59·1	−0 2·8	−3·8	−5·9	−5·3
	1021	Lengbu ...	24 44 39	93 24 10	4000	14 3 07	+1 9·0	+1 2·0	+0 0·2	−3·9	−5·8	−5·4
83 I	XXII	DIBRUGARH ...	27 29 12	94 54 35	340	25 11 19	+0 13·2	+1 14·2	+0 12·7	−3·4	−6·0	−5·1
83 J	854	Nāzirā ...	26 54 26	94 43 50	400	27 2 06	+1 16·4	+1 6·5	+0 4·5	−3·5	−6·0	−5·2
	853	Kokila Mookh ...	26 51 9	94 8 54	250	24 2 06	+1 29·7	+1 19·7	+0 17·7	−3·5	−6·0	−5·2
	1016	Mokokchung ...	26 19 40	94 31 50	4500	14 2 07	+1 10·3	+1 3·5	+0 1·5	−3·6	−6·0	−5·2
	1017	Wokha ...	26 5 40	94 15 40	5000	19 2 07	+1 10·7	+1 4·0	+0 2·0	−3·6	−6·0	−5·2
83 K	1018	Kohīmā ...	25 40 10	94 6 40	5000	23 2 07	+1 15·5	+1 8·6	+0 6·1	−3·7	−6·0	−5·3
	1019	Kairong ...	25 18 40	94 2 30	4000	2 3 07	+1 9·5	+1 2·5	+0 0·6	−3·8	−5·9	−5·3
83 L	990	Homalin ...	24 51 50	94 54 30	450	22 3 07	+1 3·5	+0 56·8	−0 4·0	−3·8	−5·8	−5·2
	991	Paungbyin ...	24 16 0	94 48 20	400	25 3 07	+1 8·2	+1 1·3	+0 1·1	−3·9	−5·7	−5·2
	1187	Tamu ...	24 12 49	94 19 0	600	25 11 07	+0 57·5	+0 53·2	−0 8·1	−3·9	−5·8	−5·3
83 M	857	Tālāp ...	27 40 10	95 33 40	500	5 3 06	+1 20·5	+1 20·2	+0 19·9	−3·3	−5·8	−5·1
	856	Mārgheritā ...	27 17 20	95 41 20	500	3 3 06	+1 18·5	+1 8·9	+0 8·0	−3·4	−5·9	−5·1
	855	Sapekhati ...	27 6 41	95 9 41	450	28 2 06	+1 25·6	+1 15·9	+0 14·4	−3·4	−6·0	−5·1
83 P	989	Nananton ...	24 45 30	95 40 30	1000	12 3 07	+0 56·7	+0 49·9	−0 10·3	−3·8	−5·7	−5·2
	988	Manyu ...	24 19 20	95 33 40	1000	7 3 07	+1 11·7	+1 4·6	+0 4·4	−3·9	−5·7	−5·2
84 A	1023	Aijal ...	23 43 28	92 43 10	3700	8 4 07	+1 6·5	+0 59·6	−0 2·2	−4·0	−5·8	−5·4
	1024	Tenzol ...	23 18 22	92 47 10	3000	15 4 07	+1 4·8	+0 57·8	−0 3·4	−4·1	−5·7	−5·4
84 B	1025	Lungleh ...	22 53 40	92 44 50	3500	20 4 07	+1 3·2	+0 56·1	−0 4·6	−4·2	−5·7	−5·3
	1026	Rāngāmāti ...	22 38 10	92 11 50	140	5 4 08	+1 0·3	+0 57·2	−0 3·5	−4·2	−5·7	−5·3
	1183	Shilghati ...	22 12 20	92 8 30	50	29 3 08	+0 57·0	+0 53·7	−0 6·4	−4·3	−5·6	−5·3
84 C	1110	Chakaria ...	21 46 0	92 5 50	50	8 5 07	+0 58·5	+0 51·4	−0 8·7	−4·3	−5·6	−5·3
	1217	Kaletwa ...	21 44 0	92 47 50	200	25 11 08	+0 48·3	+0 47·9	−0 11·7	−4·3	−5·6	−5·2
	1216	Paletwa ...	21 18 14	92 51 40	100	20 11 08	+0 45·6	+0 45·1	−0 14·5	−4·4	−5·6	−5·2
84 D	1215	Kyauktaw ...	20 50 25	92 58 40	30	16 11 08	+0 41·2	+0 40·6	−0 17·9	−4·4	−5·5	−5·1
	1109	Maungdaw ...	20 49 50	92 21 40	10	4 5 07	+0 50·4	+0 43·1	−0 16·0	−4·4	−5·6	−5·1
	1108	Rathedaung ...	20 29 10	92 45 10	20	1 5 07	+0 48·0	+0 40·5	−0 18·0	−4·5	−5·5	−5·1
	XX	AKYAB ...	20 8 6	92 53 37	20	2 4 20	−0 19·0	+0 40·8	−0 17·7	−4·5	−5·5	−5·1
84 E	1188	Lenacot ...	23 54 27	93 47 50	4700	3 12 07	+1 6·6	+1 2·3	+0 1·0	−4·0	−5·8	−5·3
	1189	Tunzan ...	23 35 28	93 41 30	3700	6 12 07	+1 6·0	+1 1·7	+0 1·0	−4·0	−5·7	−5·3
	1190	Fort White ...	23 14 49	93 46 30	4000	11 12 07	+1 15·8	+1 11·5	+0 10·8	−4·1	−5·7	−5·3
84 F	1191	Tao ...	22 45 50	93 11 20	5000	20 3 08	+0 56·1	+0 52·8	−0 7·9	−4·2	−5·7	−5·3
	1192	Haka ...	22 38 30	93 37 20	6000	27 3 08	+0 59·3	+0 56·1	−0 4·6	−4·2	−5·7	−5·3
84 H	1098	Kyindwe ...	20 58 10	93 50 10	3000	13 3 07	+0 58·2	+0 50·3	−0 8·2	−4·4	−5·5	−5·1
	1106	Myohaung ...	20 35 20	93 11 20	100	23 4 07	+0 51·3	+0 43·9	−0 14·6	−4·4	−5·5	−5·1
	1107	Myebon ...	20 4 0	93 22 20	20	27 4 07	+0 46·7	+0 39·2	−0 18·8	−4·5	−5·5	−5·0
84 I	LXXIX	KINDAT ...	23 44 10	94 26 0	300	4 3 20	−0 2·5	+0 59·1	−0 1·6	−4·0	−5·7	−5·2
	993	Kalewa ...	23 11 20	94 18 20	200	4 4 07	+1 2·1	+0 55·0	−0 5·2	−4·1	−5·7	−5·2
84 J	1194	Sihaung ...	22 51 0	94 3 20	500	8 4 08	+0 50·9	+0 47·9	−0 12·3	−4·1	−5·7	−5·2
	994	Peginma ...	22 43 50	94 42 30	200	8 4 07	+1 2·4	+0 55·3	−0 4·3	−4·1	−5·6	−5·2
	1193	Kan ...	22 24 40	94 6 20	600	4 4 08	+0 54·4	+0 51·3	−0 8·3	−4·2	−5·6	−5·2
	1086	Thitkyidaing ...	22 1 21	94 32 10	500	19 1 07	+0 52·6	+0 44·4	−0 14·7	−4·2	−5·6	−5·1
84 K	1085	Shwekondaung ...	21 49 10	94 6 30	1000	14 1 07	+0 54·4	+0 45·9	−0 13·7	−4·3	−5·6	−5·2
	1083	Sabē ...	21 27 20	94 35 0	450	4 1 07	+0 51·1	+0 42·5	−0 16·6	−4·3	−5·6	−5·1
	1084	Pasōk ...	21 22 56	94 11 0	1000	9 1 07	+0 52·9	+0 44·4	−0 14·7	−4·3	−5·6	−5·1
	1099	Thōnlanbyi ...	21 4 20	94 16 10	2000	19 3 07	+0 51·3	+0 43·5	−0 15·0	−4·4	−5·5	−5·1
84 L	1088	Seikpyu ...	20 54 20	94 47 30	200	29 1 07	+0 47·5	+0 39·0	−0 19·0	−4·4	−5·5	−5·0
	1097	Tauksok ...	20 43 30	94 8 10	700	7 3 07	+0 50·2	+0 42·2	−0 15·8	−4·4	−5·5	−5·0
	1089	Kyaukyē ...	20 34 40	94 48 30	200	30 1 07	+0 45·5	+0 37·1	−0 20·9	−4·4	−5·5	−5·0
	1096	Sidoktaya ...	20 25 50	94 14 0	400	3 3 07	+0 44·4	+0 36·4	−0 21·6	−4·4	−5·5	−5·0
	1090	Minbu ...	20 10 1	94 53 20	170	2 2 07	+0 45·5	+0 36·9	−0 20·6	−4·5	−5·5	−4·9
	1095	Ngape ...	20 4 47	94 28 0	450	1 3 07	+0 42·3	+0 34·0	−0 23·5	−4·5	−5·5	−4·9
84 M	971	Kawlin ...	23 47 30	95 41 10	600	11 12 06	+0 41·5	+0 33·5	−0 26·2	−3·9	−5·7	−5·1
	987	Yeshin ...	23 43 10	95 7 20	750	1 3 07	+0 55·1	+0 47·8	−0 12·4	−4·0	−5·7	−5·2
	970	Kanbalu ...	23 13 10	95 32 40	560	9 12 06	+0 59·2	+0 51·0	−0 8·1	−4·0	−5·6	−5·1
84 N	985	Thabeikkyin ...	22 52 50	95 58 20	300	18 2 07	+1 0·0	+0 52·5	−0 6·6	−4·0	−5·6	−5·1
	969	Shwebo ...	22 35 0	95 41 50	360	7 12 06	+0 57·7	+0 49·2	−0 9·9	−4·1	−5·6	−5·1
	986	Singu or (Ngasingu) ...	22 32 50	95 59 30	250	20 2 07	+1 11·2	+1 3·5	+0 4·9	−4·1	−5·6	−5·0

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
84 N	968	Paukkan ...	22 14 10	95 52 10	370	5 12 06	+0 58·2	+0 49·7	−0 8·9	−4·1	−5·6	−5·0
	963	Alon ...	22 13 30	95 4 50	200	19 11 06	+1 3·6	+0 54·7	−0 4·4	−4·2	−5·6	−5·1
84 O	1087	Salingyi ...	21 58 30	95 4 40	200	23 1 07	+0 44·5	+0 36·3	−0 22·8	−4·2	−5·6	−5·1
	962	Wunbye ...	21 56 10	95 32 20	300	17 11 06	+0 55·0	+0 46·1	−0 12·5	−4·2	−5·6	−5·0
	1081	Myingyan ...	21 28 31	95 23 40	250	19 12 06	+0 53·8	+0 45·1	−0 12·9	−4·3	−5·5	−5·0
	1082	Pakokku ...	21 20 0	95 5 30	200	22 12 06	+0 32·8	+0 24·1	−0 33·9	−4·3	−5·5	−5·0
	1080	Mahlaing ...	21 5 40	95 38 40	400	18 12 06	+0 51·7	+0 43·0	−0 14·5	−4·3	−5·5	−4·9
84 P	1100	Chaunggya ...	20 44 0	95 13 30	700	27 3 07	+0 35·4	+0 27·7	−0 29·8	−4·4	−5·5	−4·9
	1101	Myindegy ...	20 26 30	95 36 30	900	31 3 07	+0 48·1	+0 40·4	−0 16·6	−4·4	−5·5	−4·8
	1102	Taungdwingyi ...	20 0 0	95 32 50	500	2 4 07	+0 41·4	+0 33·7	−0 22·8	−4·4	−5·5	−4·7
85 E	1218	Kyaukpyu ...	19 25 55	93 33 30	30	4 12 08	+0 35·5	+0 35·2	−0 22·3	−4·6	−5·5	−4·9
	1219	Ramree ...	19 5 50	93 52 0	30	6 12 08	+0 33·5	+0 33·2	−0 23·8	−4·6	−5·5	−4·8
85 F	1220	Cheduba ...	18 51 11	93 43 30	20	10 12 08	+0 32·7	+0 32·4	−0 24·0	−4·7	−5·4	−4·8
85 I	1094	Myothit ...	19 45 20	94 38 10	800	26 2 07	+0 45·5	+0 37·2	−0 19·8	−4·5	−5·5	−4·8
	1240	Sakaman ...	19 38 54	94 0 10	50	7 3 06	+0 36·3	+0 37·3	−0 20·2	−4·6	−5·5	−4·9
	1093	Mindon ...	19 21 10	94 44 10	200	23 2 07	+0 40·2	+0 31·7	−0 25·3	−4·6	−5·5	−4·8
	1239	Mai ...	19 17 10	94 8 0	100	5 3 09	+0 35·7	+0 36·7	−0 20·3	−4·6	−5·5	−4·8
85 J	1238	Taungup ...	18 51 40	94 14 50	4000	2 3 00	+0 32·3	+0 33·3	−0 23·2	−4·6	−5·5	−4·7
	1237	Tabi ...	18 38 10	94 40 20	100	25 2 09	+0 33·5	+0 34·3	−0 21·7	−4·6	−5·5	−4·6
	1221	Sandoway ...	18 27 50	94 22 0	100	18 12 08	+0 32·7	+0 32·5	−0 23·5	−4·7	−5·5	−4·6
85 K	1222	Kye ntali ...	17 59 58	94 29 10	50	23 12 08	+0 29·3	+0 29·2	−0 26 2	−4·7	−5·4	−4·6
	1223	Gwa ...	17 35 20	94 34 50	50	29 12 08	+0 24·2	+0 24·2	−0 30·7	−4·8	−5·4	−4·5
	1224	Bawmi ...	17 18 30	94 34 40	50	1 1 09	+0 23·9	+0 23·9	−0 30·4	−4·8	−5·3	−4·5
85 L	1225	Tazin ...	16 54 20	94 23 40	50	4 1 09	+0 21·5	+0 21·5	−0 32·3	−4·9	−5·3	−4·4
	LXXI	BASSEIN ...	16 46 20	94 44 30	50	1 2 20	−0 30·7	+0 23·0	−0 30·3	−4·8	−5·2	−4·4
	1226	Ngo-Ton-Kaung ...	16 30 20	94 18 0	50	10 1 09	+0 18·6	+0 18·7	−0 35·1	−4·9	−5·3	−4·4
	1228	Lebutta ...	16 8 40	94 45 20	50	20 1 09	+0 39·6	+0 39·9	−0 12·8	−4·9	−5·2	−4·3
85 M	1091	Sinbaungwe ...	19 43 0	95 9 30	170	5 2 07	+0 42·3	+0 33·7	−0 23·3	−4·5	−5·5	−4·8
	1103	Hngetpyawgyin ...	19 34 20	95 39 20	900	4 4 07	+0 42·8	+0 35·0	−0 20·9	−4 5	−5·4	−4·7
	1092	Thayetmyo ...	19 19 30	95 11 10	150	21 2 07	+0 40·3	+0 31·9	−0 24·0	−4·5	−5·4	−4·7
85 N	1104	Taungle ...	18 53 30	95 40 20	200	11 4 07	+0 41·0	+0 33·1	−0 21·8	−4·6	−5·4	−4·5
	LXX	PROME ...	18 49 40	95 13 20	100	31 12 19	−0 25·4	+0 30·1	−0 25·4	−4·6	−5·4	−4·6
	1067	Paungdē ...	18 29 50	95 29 50	100	15 11 06	+0 41·2	+0 31·4	−0 23·5	−4·6	−5·4	−4·5
	1236	Petye ...	18 18 30	95 8 20	100	19 2 09	+0 29·3	+0 30·0	−0 24·9	−4·7	−5·4	−4·5
85 O	1066	Minhla ...	17 58 30	95 42 20	70	13 11 06	+0 39·1	+0 29·3	−0 24·5	−4·6	−5·3	−4·4
	1235	Mēzaligōn ...	17 52 50	95 14 0	50	17 2 09	+0 28·3	+0 29·0	−0 25·3	−4·7	−5·3	−4·5
	1069	Henzada Shore ...	17 38 30	95 29 10	40	18 11 06	+0 43·3	+0 33·4	−0 19·8	−4·7	−5·2	−4·4
	1065	Palōn ...	17 26 20	95 56 0	70	11 11 06	+0 38·7	+0 28·6	−0 23·5	−4·7	−5·1	−4·3
	1070	Athōk ...	17 12 13	95 5 2	50	20 11 06	+0 41·0	+0 30·8	−0 22·4	−4·8	−5·2	−4·4
	1234	Yandoon ...	17 2 50	95 38 10	20	11 2 09	+0 29·0	+0 29·6	−0 22·5	−4·7	−5·1	−4·3
85 P	1231	Ma-ubin ...	16 44 20	95 39 10	10	1 2 09	+0 24·4	+0 24·8	−0 26·7	−4·7	−5·0	−4·3
	1229	Wakema ...	16 36 0	95 10 10	10	24 1 09	+0 37·5	+0 37·8	−0 14·3	−4·8	−5·1	−4·3
	1232	Pyapon ...	16 17 10	95 40 50	10	3 2 09	+0 21·8	+0 22·3	−0 28·7	−4·8	−5·0	−4·2
	1230	Mya-Tha ...	16 14 10	95 17 0	10	27 1 09	+0 25·2	+0 25·6	−0 25·9	−4·8	−5·0	−4·3
86 C	1334	Paget Island ...	13 25 50	92 50 0	10	15 1 11	−0 9·1	+0 2·1	−0 51·9	−5·1	−5·5	−4·2
86 D	1333	Port Andaman ...	12 48 10	92 40 20	10	13 1 11	−0 12·1	−0 0·7	−0 55·3	−5·1	−5·6	−4·2
	1332	Port Anson ...	12 18 0	92 43 0	10	11 1 11	−0 15·0	−0 3·6	−0 58·2	−5·1	−5·6	−4·2
86 I	1227	Ka-Baung-Hmaw ...	15 59 50	94 16 40	30	13 1 09	+0 17·5	+0 17·7	−0 35·6	−4·9	−5·3	−4·3
86 M	1233	Kadon-Kani ...	15 46 40	95 12 50	10	7 2 09	+0 20·3	+0 20·8	−0 30·2	−4·8	−5·0	−4·2
87 A	XXIII	PORT BLAIR ...	11 39 53	92 42 48	250	9 12 19	−0 57·9	−0 4·6	−0 58·1	−5·1	−5·6	−4·1
92 C	974	Taungni ...	25 10 20	96 44 20	540	17 12 06	−0 22·5	−0 29·9	−1 29·6	−3·6	−5·7	−5·1
92 D	973	Mohnyin ...	24 46 30	96 21 20	680	14 12 06	+0 6·2	−0 1·4	−1 1·1	−3·7	−5·7	−5·1
	972	Naba ...	24 15 0	96 11 10	480	12 12 06	+0 56·0	+0 48·2	−0 11·5	−3·8	−5·7	−5·1
92 G	LXVIII	MYITKYINA ...	25 23 20	97 24 10	470	19 2 20	+0 36·6	+1 36·5	+0 37·3	−3·6	−5·7	−5·0
92 H	976	Sinbo ...	24 46 40	97 2 50	450	24 12 06	+1 30·2	+1 22·7	+0 24·1	−3·7	−5·6	−5·0
	LXIX	BHAMO ...	24 15 30	97 13 10	400	23 2 20	−0 3·3	+0 56·1	−0 2·5	−3·8	−5·7	−5·0
93 A	984	Tagaung ...	23 30 16	96 0 50	300	16 2 07	+1 7·4	+0 59·9	+0 0·8	−4·0	−5·6	−5·1
	983	Wainglōn ...	23 27 50	96 36 30	800	11 2 07	+1 15·2	+1 7·8	+0 9·2	−3·9	−5·6	−5·0
93 B	982	Mogok ...	22 56 0	96 31 20	3700	3 2 07	+0 52·5	+0 44·9	−0 13·7	−4·0	−5·6	−5·0

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The values of Declination reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
93 B	965	Gokteik Viaduct ...	22 20 10	96 51 30	2500	24 11 06	+0 49·4	+0 40·8	−0 16·7	−4·1	−5·5	−4·9
	964	Maymyo ...	22 2 20	96 28 0	3700	21 11 06	+0 53·2	+0 44·6	−0 12·9	−4·1	−5·5	−4·9
	LXVII	MANDALAY ...	22 0 13	96 5 58	250	16 3 20	−0 10·7	+0 42·4	−0 15·7	−4·2	−5·5	−5·0
93 C	1157	Kyawkku ...	21 48 20	96 56 10	3100	27 3 08	+0 44·9	+0 41·8	−0 15·2	−4·1	−5·5	−4·8
	1079	Kyaukse ...	21 36 30	96 8 0	280	15 12 06	+0 46·7	+0 38·1	−0 19·4	−4·2	−5·5	−4·9
	1158	Lawk Sawk ...	21 14 40	96 52 30	3000	31 3 08	+0 44·9	+0 41·7	−0 14·8	−4·2	−5·5	−4·7
	1078	Thĕdaw ...	21 5 10	96 3 50	440	10 12 06	+0 49·3	+0 40·4	−0 16·6	−4·3	−5·5	−4·8
93 D	LXXVIII	KALAW ...	20 37 40	96 34 10	4300	22 3 20	−0 15·3	+0 42·3	−0 14·2	−4·3	−5·5	−4·7
	1077	Shweda ...	20 31 10	96 4 50	530	8 12 06	+0 54·8	+0 45·9	−0 10·6	−4·3	−5·5	−4·7
	1200	Pinlaung ...	20 7 50	96 46 50	4700	21 1 08	+0 40·9	+0 36·9	−0 18·5	−4·3	−5·4	−4·6
93 E	978	Sikaw ...	23 50 0	97 4 0	2600	4 1 07	+1 9·8	+1 2·2	+0 3·6	−3·8	−5·6	−5·0
	979	Namhkam ...	23 50 0	97 40 10	2400	11 1 07	+0 52·5	+0 45·0	−0 13·1	−3·8	−5·6	−4·9
	980	Hsenwi (Theinni) ...	23 17 40	97 57 10	2100	17 1 07	+0 55·1	+0 47·5	−0 9·5	−3·9	−5·5	−4·8
	981	Mān-Ton ...	23 15 0	97 7 0	4000	26 1 07	+0 51·0	+0 43·5	−0 14·6	−3·9	−5·6	−4·9
93 F	XIX	LASHIO ...	22 56 12	97 44 48	2700	11 3 20	−0 14·0	+0 44·1	−0 13·0	−3·9	−5·5	−4·8
	967	Manpwe ...	22 50 40	97 35 30	2200	29 11 06	+0 57·2	+0 49·0	−0 8·0	−3·9	−5·5	−4·8
	966	Hsīpaw ...	22 36 40	97 17 50	1800	26 11 06	+0 53·1	+0 44·7	−0 12·8	−4·0	−5·5	−4·9
	1156	Man Li ...	22 5 50	97 31 30	2500	20 3 08	+0 47·8	+0 44·7	−0 11·8	−4·0	−5·5	−4·7
93 G	1155	Nawngla-Yaw ...	21 38 17	97 44 30	3300	16 3 08	+0 47·2	+0 44·0	−0 12·5	−4·1	−5·5	−4·7
	1154	Wān-Ho-hwe ...	21 9 0	97 34 40	4500	12 3 08	+0 46·0	+0 42·6	−0 12·8	−4·2	−5·4	−4·6
	1153	Wān Hoko ...	21 0 6	97 57 0	3500	5 3 08	+0 45·0	+0 41·6	−0 13·3	−4·1	−5·4	−4·5
93 H	1159	Taunggyi ...	20 46 30	97 2 50	4700	6 4 08	+0 48·1	+0 45·0	−0 10·4	−4·2	−5·4	−4·6
	1149	Mōngnai ...	20 30 17	97 52 0	3000	11 2 08	+0 40·6	+0 36·9	−0 18·0	−4·2	−5·4	−4·5
	1201	Loi-put ...	20 17 30	97 18 40	4000	28 1 08	+0 46·3	+0 42·3	−0 12·6	−4·3	−5·4	−4·5
	1202	Mawkmai ...	20 13 10	97 43 30	1630	5 2 08	+0 45·7	+0 41·8	−0 12·6	−4·3	−5·4	−4·4
93 J	1135	Mōng Ma ...	22 45 7	98 16 10	3500	18 11 07	+0 51·8	+0 47·4	−0 9·1	−3·9	−5·5	−4·7
	1136	Mōng Yai ...	22 25 26	98 2 30	2700	22 11 07	+0 51·2	+0 46·8	−0 9·7	−4·0	−5·5	−4·7
	1137	Mōng Awt ...	22 2 16	98 22 30	2500	28 11 07	+0 50·7	+0 46·3	−0 9·1	−4·0	−5·4	−4·6
93 K	1138	Hsupwo ...	21 49 45	98 50 20	4600	3 12 07	+0 48·4	+0 44·1	−0 10·8	−4·0	−5·4	−4·5
	1152	Wān Kawng ...	21 23 22	98 22 30	1800	1 3 08	+0 47·4	+0 44·0	−0 10·9	−4·1	−5·4	−4·5
93 L	1151	Mōngpu ...	20 54 38	98 44 30	1500	22 2 08	+0 47·1	+0 43·6	−0 10·8	−4·1	−5·4	−4·4
	1150	Kengtawng ...	20 45 8	98 18 10	2200	17 2 08	+0 46·5	+0 42·9	−0 11·5	−4·1	−5·4	−4·4
	1148	Mōngpan ...	20 19 11	98 22 10	2200	7 2 08	+0 44·5	+0 40·7	−0 13·7	−4·2	−5·4	−4·4
	1146	Mōng Tun ...	20 18 4	98 54 10	1700	26 1 08	+0 44·4	+0 40·6	−0 12·7	−4·1	−5·3	−4·3
93 O	1141	Mōngsang ...	21 50 38	99 41 30	3000	24 12 07	+0 40·5	+0 36·5	−0 17·9	−3·9	−5·4	−4·4
	1139	Mōng Ping ...	21 21 1	99 1 10	2600	11 12 07	+0 44·8	+0 40·6	−0 13·8	−4·0	−5·4	−4·4
	1140	Kengtung ...	21 16 56	99 37 0	1500	17 12 07	+0 44·9	+0 40·7	−0 12·6	−4·0	−5·3	−4·3
93 P	1144	Mōng Hai ...	20 46 14	99 48 10	2000	15 1 08	+0 44·3	+0 40·5	−0 12·2	−4·0	−5·2	−4·3
	1145	Mōng Hsāt ...	20 31 35	99 15 50	4000	22 1 08	+0 44·9	+0 41·0	−0 11·7	−4·1	−5·2	−4·3
94 A	1076	Pyokkwe ...	19 57 6	96 13 34	400	5 12 06	+0 45·7	+0 36·6	−0 18·8	−4·4	−5·4	−4·6
	1198	Thaungbyin ...	19 55 20	96 31 10	1000	4 1 08	+0 43·6	+0 39·2	−0 16·2	−4·4	−5·4	−4·6
	1199	Thithyit ...	19 37 50	96 40 30	2000	13 1 08	+0 40·9	+0 36·6	−0 18·3	−4·4	−5·4	−4·5
	1075	Myohla ...	19 24 40	96 16 10	240	3 12 06	+0 48·7	+0 39·4	−0 15·5	−4·5	−5·4	−4·5
94 B		**TOUNGOO OBSY.** ...	18 55 45	96 27 3	160	...	...	+0 33·1	−0 21·5	−4·5	−5·4	−4·4
	1074	Nyaungbintha ...	18 24 17	96 27 21	100	30 11 06	+0 40·7	+0 31·3	−0 22·5	−4·5	−5·3	−4·4
94 C	1073	Pyuntazā ...	17 53 0	96 43 20	40	28 11 06	+0 30·1	+0 20·7	−0 31·4	−4·5	−5·1	−4·3
	1072	Pegu ...	17 20 30	96 28 40	30	26 11 06	+0 47·1	+0 37·4	−0 14·1	−4·6	−5·0	−4·3
94 D	1105	Thamaing ...	16 51 49	96 6 55	20	15 4 07	+0 35·7	+0 27·7	−0 23·3	−4·7	−5·0	−4·2
94 E	1203	Ta-Supteng ...	19 51 20	97 45 10	600	10 2 08	+0 40·9	+0 37·1	−0 17·3	−4·3	−5·4	−4·4
	1205	Loikaw ...	19 40 20	97 13 10	2500	24 2 08	+0 44·7	+0 41·0	−0 13·4	−4·4	−5·4	−4·4
	1204	Namon ...	19 21 42	97 30 50	600	13 2 08	+0 43·7	+0 39·8	−0 14·0	−4·4	−5·3	−4·4
	1206	Kreuko ...	19 15 9	97 2 30	4000	5 3 08	+0 42·4	+0 38·8	−0 15·6	−4·4	−5·4	−4·4
94 F	1207	Pasawng ...	18 52 10	97 18 40	350	13 3 08	+0 44·8	+0 41·3	−0 12·5	−4·4	−5·3	−4·4
	1208	Salween ...	18 26 57	97 21 40	350	18 3 08	+0 39·6	+0 36·1	−0 16·6	−4·5	−5·2	−4·3
	1209	Papun ...	18 3 22	97 27 20	200	26 3 08	+0 43·6	+0 40·1	−0 11·5	−4·5	−5·1	−4·2
94 G	1210	Maipali ...	17 30 45	97 38 40	100	4 4 08	+0 37·2	+0 33·9	−0 17·1	−4·5	−5·0	−4·2
	1197	Kyaikto ...	17 18 40	97 1 0	50	21 12 07	+0 35·9	+0 31·2	−0 19·8	−4·6	−5·0	−4·2
	1211	Hlaingbwe ...	17 7 0	97 49 10	50	7 4 08	+0 38·6	+0 35·3	−0 14·6	−4·5	−4·9	−4·1
94 H	1196	Thaton ...	16 55 8	97 20 20	50	19 12 07	+0 36·3	+0 31·6	−0 18·4	−4·5	−4·9	−4·1
	LXXII	MOULMEIN ...	16 29 40	97 37 30	50	27 12 10	−0 17·9	+0 30·3	−0 17·9	−4·5	−4·7	−4·0
	1246	Amherst ...	16 4 50	97 34 0	50	2 2 09	+0 28·5	+0 28·9	−0 19·3	−4·5	−4·7	−4·0
94 I	1147	Mōnghta ...	19 51 14	98 34 0	1400	31 1 08	+0 44·0	+0 40·1	−0 9·0	−4·2	−4·6	−4·3

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of Observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		° ′	° ′	° ′	′	′	′
94 L	1245	Myawadi ...	16 41 18	98 29 50	500	8 1 09	+0 34·8	+0 34·9	−0 13·3	−4·3	−4·7	−4·0
	1244	Kyondo ...	16 35 45	98 3 50	50	1 1 09	+0 34·7	+0 34·7	−0 13·5	−4·4	−4·7	−4·0
	1241	Thanba Ya ...	16 7 20	98 2 10	50	24 11 08	+0 34·9	+0 34·5	−0 12·6	−4·4	−4·6	−3·9
	1243	Mitan ...	16 0 10	98 26 30	300	23 12 08	+0 34·1	+0 34·0	−0 12·0	−4·3	−4·5	−3·8
95 R	1247	Anin ...	15 39 40	97 44 0	10	7 2 09	+0 25·5	+0 26·0	−0 21·1	−4·5	−4·6	−3·9
	1248	Ye ...	15 14 40	97 51 10	30	11 2 09	+0 29·5	+0 30·0	−0 16·1	−4·5	−4·6	−3·7
95 I	1242	Kyunghaung ...	15 32 11	98 15 20	200	4 12 08	+0 32·4	+0 32·1	−0 13·9	−4·4	−4 5	−3·8
95 J	1214	Shintali ...	14 29 14	98 10 0	100	6 5 08	+0 35·8	+0 32·9	−0 11·6	−4·4	−4 5	−3·5
	1249	Myitta ...	14 10 50	98 29 50	500	25 2 09	+0 29·5	+0 30·2	−0 13·8	−4·3	−4·5	−3·4
	XVIII	TAVOY ...	14 5 3	98 12 14	30	7 1 20	−0 16·3	+0 28·5	−0 16·2	−4·3	−4·5	−3·4
95 K	1250	Gonnyinseik ...	13 41 20	98 18 50	20	6 3 09	+0 26·5	+0 27·3	−0 16·7	−4·3	−4·5	−3·4
	1251	Mali ...	13 6 50	98 19 40	30	10 3 09	+0 30·7	+0 31·6	−0 11·9	−4·2	−4·5	−3·3
95 L	1213	Palaw ...	12 58 0	98 44 20	50	20 4 08	+0 30·0	+0 27·1	−0 15·8	−4·1	−4·4	−3·3
	1212	Mergui ...	12 26 50	98 38 50	50	15 4 08	+0 30·6	+0 27·7	−0 14·7	−4·1	−4·4	−3·2
95 P	1255	Tenasserim ...	12 5 40	99 3 30	30	19 4 09	+0 27·7	+0 29·0	−0 12·2	−4·1	−4·2	−3·2
96 I	1252	Kan-Hmaw ...	11 48 20	98 33 20	50	23 3 09	+0 20·1	+0 21·1	−0 20·7	−4·1	−4·3	−3·2
	1253	Bokpyin ...	11 16 40	98 49 30	20	28 3 09	+0 23·1	+0 24·1	−0 16·6	−4·0	−4·2	−3·1
96 K	LXXX	VICTORIA POINT ...	9 59 30	98 35 20	100	21 1 20	−0 19·6	+0 19·6	−0 19·4	−4·0	−4·0	−3·0
102 C	1142	Hsoplamhsaplwe ...	21 23 37	100 14 20	2000	2 1 08	+0 43·8	+0 39·9	−0 12·8	−3·9	−5·2	−4·3
102 D	1143	Nam-Lang-Paliao ...	20 49 47	100 20 50	1400	9 1 08	+0 45·2	+0 41·4	−0 10·2	−3·9	−5·1	−4·2

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
34 J	359	Chaman ...	30 56 10	66 25 20	4450	28 3 10	·31763	·31813	·31363	−36	−40	−42
	358	Saiyid Hamīd ...	30 35 20	66 43 20	4800	2 4 03	·32281	·32080	·31641	−35	−39	−41
	III	QUETTA ...	30 12 21	66 59 55	5500	11 12 19	·31867	·32293	·31805	−34	−38	−40
34 K	1264	Mastung Road ...	29 52 40	66 50 30	5400	7 4 10	·32367	·32414	·31997	−34	−37	−39
	1263	Kurdagāp ...	29 45 30	66 26 10	5400	6 4 10	·32391	·32438	·32016	−34	−37	−40
	1111	Nushki No. 1 ...	29 33 10	66 1 0	3310					−34	−36	−39
	1262	Nushki ...	29 32 40	66 2 0	3200	3 4 10	·32435	·32480	·32069	−34	−36	−39
	1112	Nushki No. 2 ...	29 32 0	66 0 40	3160					−34	−36	−38
34 N	430	Hindubāgh ...	30 49 20	67 44 30	5800	2 4 04	·32223	·32057	·31618	−35	−39	−41
	431	Chinjan' ...	30 34 10	67 55 50	7100	4 4 04	·32376	·32210	·31777	−35	−38	−41
	357	Mangi ...	30 22 0	67 28 10	5200	1 4 03	·32372	·32171	·31743	−35	−38	−40
34 O	360	Ab-i-Gum ...	29 48 10	67 23 10	2160	6 4 03	·32658	·32463	·32052	−34	−36	−39
	54 (a)	Sibi ...	29 32 39	67 51 40	450	21 3 10	·32539	·32582	·32187	−33	−35	−37
35 M	289	Shāhdādpur ...	27 51 0	67 54 40	200	14 12 02	·33656	·33468	·33144	−31	−29	−30
	290	Ghaibi Dero ...	27 36 0	67 38 50	200	18 12 02	·33757	·33570	·33251	−31	−29	−29
	291	Gotemado ...	27 11 20	67 35 30	150	21 12 02	·33905	·33718	·33415	−31	−28	−27
	48	Sita Road ...	27 2 30	67 51 10	150	4 2 03	·34009	·33832	·33535	−30	−27	−27
35 N	292	Hairo Khān ...	26 49 20	67 28 10	170	26 12 02	·34010	·33829	·33537	−30	−27	−26
	293	Tāndo Rahim Khān ...	26 30 30	67 25 40	150	29 12 02	·34148	·33968	·33692	−30	−26	−24
	49	Bubāk Road ...	26 29 0	67 46 10	110	18 3 10	·34002	·34034	·33758	−30	−26	−24
	294	Narani ...	26 7 30	67 32 50	1000	1 1 03	·34401	·34221	·33956	−30	−25	−23
35 O	295	Pokrum Lundi ...	25 48 30	67 44 30	1000	5 1 03	·34453	·34279	·34025	−29	−24	−22
	296	Belo ...	25 47 10	67 26 50	1000	8 1 03	·34423	·34249	·33995	−29	−24	−22
	297	Kund ...	25 34 50	67 19 0	600	11 1 03	·34477	·34304	·34055	−29	−24	−21
	298	Kharr ...	25 17 20	67 7 50	300	14 1 03	·34556	·34383	·34145	−29	−23	−20
35 P	II	KARĀCHI ...	24 49 24	67 2 28	20	16 12 19	·34322	·34554	·34321	−29	−23	−19
	39	Dābheji ...	24 48 54	67 29 50	100	20 1 03	·34736	·34569	·34342	−28	−22	−19
	917	Mīrpur Sakro ...	24 33 10	67 37 0	80	4 12 05	·34772	·34689	·34467	−27	−22	−18
	916	Shāhbandar ...	24 10 0	67 54 0	50	1 12 05	·34932	·34852	·34641	−26	−21	−17
38 K	316	Thal ...	33 21 50	70 33 50	2500	17 4 03	·31274	·31046	·30524	−40	−47	−48
	313	Latammar ...	33 7 0	70 51 50	1500	6 4 03	·31452	·31223	·30717	−40	−46	−46
38 L	312	Sarai Naurang ...	32 49 40	70 47 0	1900	1 4 03	·31515	·31291	·30796	−39	−45	−45
	311	Darra Pezu ...	32 19 20	70 44 20	1050	29 3 03	·31802	·31583	·31105	−38	−43	−44
	310	Tānk ...	32 12 30	70 23 20	850	26 3 03	·31599	·31380	·30902	−38	−43	−44
38 N	87	Dargai ...	34 30 10	71 53 50	1540	25 3 02	·31011	·30727	·30184	−42	−48	−51
	XXVI	PESHĀWAR ...	34 0 40	71 33 40	1050	25 11 19	·30374	·30907	·30369	−41	−48	−50
38 O	315	Kohāt ...	33 34 40	71 26 30	1650	13 4 03	·31271	·31042	·30520	−40	−47	−48
	314	Bānda Dāud Shāh ...	33 16 40	71 11 10	1900	9 4 03	·31323	·31094	·30583	−40	−46	−47
38 P	91	Massan ...	32 53 30	71 43 20	1300	3 4 02	·31577	·31314	·30825	−39	−44	−45
	317	Dhanda ...	32 46 30	71 57 40	1300	23 4 03	·31595	·31379	·30890	−38	−44	−45
	XXVII	KUNDIĀN ...	32 27 30	71 28 20	650	1 12 19	·30567	·31041	·30563	−38	−43	−44
39 B	429	Kila Saifulla ...	30 42 50	68 21 10	5110	30 3 04	·32395	·32229	·31790	−35	−39	−41
	428	Kalu Killa ...	30 41 40	68 43 20	4900	28 3 04	·32481	·32314	·31875	−35	−39	−41
	432	Loralai ...	30 21 30	68 36 30	4450	7 4 04	·32532	·32371	·31943	−34	−38	−40
39 C	361	Spintangi ...	29 55 50	68 4 50	1900	8 4 03	·32686	·32491	·32080	−34	−36	−39
	433	Puzza ...	29 54 0	68 42 40	5100	12 4 04	·32744	·32584	·32178	−34	−36	−38
	417	Lehri ...	29 10 42	68 12 40	490	19 2 04	·32998	·32837	·32458	−33	−34	−35
	418	Chirdi Dhabbar ...	29 5 17	68 43 10	1600	22 2 04	·33111	·32956	·32583	−32	−33	−35
39 D	53	Bellpat ...	28 59 40	68 0 20	300	29 11 02	·33158	·32069	·32596	−31	−33	−35
	299	Hamidpowhar ...	28 26 0	68 46 50	200	14 2 03	·33432	·33250	·32904	−31	−31	−32
	52	Jhatpat ...	28 22 20	68 19 20	180	28 11 02	·33380	·33101	·32845	−31	−31	−32
	288	Chachar ...	28 12 10	68 9 20	200	11 12 02	·33428	·33240	·32905	−31	−30	−31
39 E	426	Fort Sandeman ...	31 20 40	69 27 10	4600	22 3 04	·32198	·32026	·31576	−36	−40	−42
39 F	427	Musāfirpur ...	30 58 3	69 8 30	4840	25 3 04	·32391	·32219	·31780	−36	−39	−41
	424	Mūsā Khel Bāzār ...	30 52 30	69 48 50	4450	12 3 04	·32457	·32289	·31855	−35	−39	−40
	425	Mekhtar ...	30 29 0	69 29 20	4200	17 3 04	·32586	·32418	·31999	−35	−38	−40
	423	Kingri ...	30 26 20	69 49 0	4000	9 3 04	·32647	·32484	·32067	−34	−37	−39
	422	Rakhni ...	30 2 50	69 55 30	3330	6 3 04	·32835	·32671	·32270	−34	−36	−37
39 G	421	Mat ...	29 42 20	69 40 0	3200	1 3 04	·32919	·32759	·32369	−33	−35	−36
	420	Chat ...	29 20 21	69 24 30	2700	27 2 04	·33063	·32908	·32529	−32	−34	−35
	419	Dera Bugti ...	29 2 0	69 9 20	1480	24 2 04	·33163	·33008	·32640	−32	−33	−34
39 H	302	Tuziani ...	28 56 40	69 54 40	350	25 2 03	·33294	·33113	·32756	−31	−32	−33
	301	Bārā ...	28 33 0	69 39 30	300	21 2 03	·33483	·33301	·32961	−31	−30	−32

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			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
39 H	300	Bela (Tas) ...	28 23 40	69 14 10	230	17 2 03	·33502	·33320	·32985	−31	−30	−31
	26	Reti ...	28 6 10	69 51 20	240	10 2 04	·33685	·33538	·33214	−30	−29	−30
	56	Khairpur Deherki ...	28 2 40	69 41 30	240					−30	−29	−30
39 I	309	Draband ...	31 44 0	70 19 40	780	21 3 03	·32343	·32129	·31673	−37	−41	−42
	308	Gurwāli ...	31 21 50	70 29 0	700	17 3 03	·32409	·32200	·31755	−36	−40	−41
	364	Dorata ...	31 5 10	70 55 30	500	14 4 03	·32477	·32277	·31843	−35	−39	−40
39 J	307	Jhok Bodo ...	30 55 0	70 32 20	680	14 3 03	·32506	·32303	·31875	−35	−38	−40
	363	Daera Dīnpanāh ...	30 34 10	70 55 30	440	13 4 03	·32651	·32457	·32045	−34	−37	−38
	306	Mamdāni ...	30 25 20	70 36 50	600	10 3 03	·32797	·32600	·32194	−34	−36	−38
	305	Vidor ...	30 5 10	70 32 20	500	7 3 03	·33006	·32814	·32419	−33	−35	−37
	362	Ghāzi Ghāt ...	30 4 50	70 51 50	400	11 4 03	·33079	·32840	·32450	−33	−35	−36
39 K	304	Ganehar ...	29 44 0	70 20 20	450	3 3 03	·32922	·32730	·32346	−33	−34	−36
	303	Dirigri ...	29 24 30	70 8 30	450	28 2 03	·33212	·33025	·32652	−32	−33	−35
39 L	58 (a)	Khānpur ...	28 38 50	70 39 10	290	22 11 02	·33558	·33375	·33040	−30	−30	−31
	57	Sādikābād ...	28 18 10	70 7 40	270	24 12 02	·33663	·33482	·33158	−30	−29	−30
	244	Maruwala Toba ...	28 15 34	70 38 50	300	20 12 02	·33544	·33363	·33039	−30	−29	−30
	245	Bher Tibba ...	28 0 27	70 22 10	300	22 12 02	·33764	·33589	·33276	−29	−28	−29
39 M	366	Shāh Alam ...	31 58 40	71 9 0	600	18 4 03	·32030	·31819	·31357	−37	−42	−42
	365	Bhakkar ...	31 37 10	71 3 0	560	16 4 03	·32245	·32039	·31588	−36	−41	−41
	322	Nāwankot ...	31 6 30	71 31 0	500	13 5 03	·32601	·32404	·31981	−35	−38	−39
39 N	323	Rangpur ...	30 31 0	71 34 50	450	17 5 03	·32859	·32668	·32267	−34	−36	−37
	76 (a)	Multān ...	30 10 50	71 26 50	400	7 12 12	·32530	·32668	·32278	−33	−35	−36
	324	Muzaffargarh ...	30 4 40	71 10 50	380	20 5 03	·33038	·32853	·32463	−33	−35	−36
39 O	77	Gilawāla ...	29 43 6	71 28 20	380	28 2 02	·33246	·33027	·32659	−32	−33	−34
	IV	BAHAWALPUR ...	29 24 23	71 40 35	380	5 12 19	·32763	·33118	·32761	−31	−32	−33
	37	Samāsata ...	29 21 12	71 32 30	370	18 11 02	·33530	·33340	·32983	−31	−32	−33
	59	Chanigot ...	29 5 11	71 1 30	340	20 11 02	·33387	·33198	·32847	−31	−31	−33
39 P	25	Derāwar Fort ...	28 46 20	71 20 10	350	26 2 02	·33406	·33201	·32866	−30	−30	−31
	24	Khāngarh ...	28 22 10	71 42 50	350	8 12 02	·33835	·33659	·33341	−29	−28	−30
	242	Sarwar ka Toba ...	28 17 34	71 6 40	350	14 12 02	·33707	·33532	·33208	−29	−29	−30
40 A	XXIV	RUK JUNCTION ...	27 48 23	68 38 20	200	8 12 19	·33198	·33520	·33196	−31	−29	−30
	47 (a)	Lārkāna ...	27 32 28	68 11 50	200	2 2 03	·33712	·33529	·33216	−31	−28	−29
	45	Khairpur ...	27 31 7	68 44 20	190	29 1 03	·33827	·33649	·33341	−30	−28	−28
40 B	44	Kandiāro Road ...	26 59 20	68 20 50	150	28 1 03	·34112	·33934	·33642	−30	−27	−26
	30	Tujjul ...	26 52 50	68 59 20	200	19 3 02	·34150	·33953	·33672	−29	−26	−25
	43	Daur ...	26 27 40	68 18 30	120	27 1 03	·34251	·34079	·33809	−29	−25	−24
	31	Mubarik Shāh Syud ...	26 23 40	68 56 20	200	24 3 02	·34341	·34152	·33882	−28	−25	−24
	50	Sann ...	26 1 40	68 6 50	100	6 2 03	·34416	·34245	·33986	−29	−24	−23
40 C	42	Shāhdādpur ...	25 55 39	68 37 53	90	26 1 03	·34461	·34295	·34041	−28	−24	−22
	51	Petāro ...	25 32 0	68 19 10	80	8 2 03	·34587	·34422	·34179	−28	−23	−21
	133	Rahoki Junction ...	25 24 30	68 28 0	70	12 2 02	·34649	·34463	·34225	−27	−23	−20
	41	Hyderābād ...	25 22 25	68 22 30	70	23 1 03	·34637	·34477	·34239	−27	−23	−20
	40	Jhimpir ...	25 1 49	68 0 50	100	21 1 03	·34727	·34567	·34334	−27	−23	−19
40 D	914	Talher ...	24 53 0	68 49 0	60	23 11 05	·34774	·34693	·34472	−26	−21	−19
	915	Mīrpur Batoro ...	24 44 10	68 15 20	30	27 11 05	·34760	·34677	·34450	−27	−22	−19
	9	Kirria ...	24 20 0	68 46 40	20	28 11 03	·34956	·34829	·34624	−25	−20	−17
40 E	55	Pano Ākil ...	27 50 50	69 6 50	220	25 11 02	·33735	·33552	·33233	−30	−29	−29
	27	Lūnwara Tur ...	27 44 30	69 38 40	300	7 3 02	·33822	·33617	·33304	−30	−28	−29
	28	Piareh-ka-Toar ...	27 18 20	69 32 20	300	11 3 02	·33993	·33796	·33499	−29	−27	−27
40 F	29	Jussio ...	26 48 40	69 29 20	300	14 3 02	·34207	·34017	·33736	−28	−26	−25
	86	Sumrahu ...	26 29 0	69 59 40	300					−27	−24	−24
	32	Bakār ...	26 5 10	69 9 0	100	27 3 02	·34446	·34264	·34005	−27	−24	−23
40 G	34	Rānāhu ...	25 56 10	69 47 20	250	3 4 02	·34501	·34326	·34078	−26	−23	−22
	33	Khipro ...	25 49 20	69 22 20	50	31 3 02	·34521	·34339	·34091	−27	−23	−22
	XXXI	MIRPUR KHAS ...	25 31 19	69 1 40	50	19 12 19	·34241	·34483	·34240	−27	−23	−21
	135(a)	Dhoro Naro ...	25 29 51	69 33 50	50	12 2 03	·34657	·34504	·34272	−26	−22	−20
	912	Mithrea ...	25 9 42	70 0 0	300	16 11 05	·34468	·34390	·34169	−25	−21	−19
	913	Pireh Kolachi ...	25 1 27	69 26 20	40	19 11 05	·34723	·34645	·34424	−25	−21	−19
40 H	7 (a)	Diplo ...	24 28 0	69 34 30	20	20 11 03	·34862	·34739	·34534	−24	−20	−17
	8	Rahim-ki-Bāzār ...	24 19 0	69 9 0	10	24 11 03	·34977	·34849	·34644	−25	−20	−17
40 I	248	Islāmgarh ...	27 51 30	70 48 40	400	17 12 02	·33704	·33529	·33221	−29	−28	−28
	416	Kalu ...	27 25 7	70 17 28	400	6 2 04	·34053	·33916	·33619	−28	−27	−27
40 J	410	Ravilahu ...	26 52 35	70 2 20	300	19 1 04	·34213	·34074	·33799	−28	−25	−25
	411	Khubha ...	26 49 8	70 40 9	500	22 1 04	·34277	·34144	·33869	−27	−25	−25

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
40 J	409	Jejrawa ...	26 15 23	70 38 51	400	15 1 04	·34473	·34344	·34091	−26	−23	−23
	85	Nasīr Aresur ...	26 9 20	70 7 30	300	7 4 02	·34502	·34327	·34074	−26	−23	−23
40 K	262	Jaisingder ...	25 45 41	70 24 30	300	10 2 03	·34428	·34281	·34044	−25	−22	−21
	261	Bhachbhar ...	25 44 0	70 59 0	700	8 2 03	·34208	·34061	·33830	−25	−21	−21
	911	Khisar ...	25 21 49	70 28 40	400	12 11 05	·34753	·34678	·34452	−24	−21	−20
40 L	4 (*a*)	Sheria Bheel ...	24 43 50	70 52 50	200	13 11 03	·35013	·34895	·34697	−23	−18	−18
	6 (*a*)	Islamkot ...	24 42 10	70 9 50	200	17 11 03	·35487	·35364	·35154	−24	−20	−18
	5	Tūr Lūnian ...	24 39 0	70 31 40	200	15 11 03	·35076	·34958	·34754	−23	−19	−18
40 M	241	Lohita Tibba ...	27 55 5	71 33 10	400	11 12 02	·33990	·33820	·33518	−28	−27	−28
	414	Satiaya ...	27 25 15	71 39 9	400	31 1 04	·33784	·33651	·33365	−27	−26	−26
	415	Diga ...	27 24 15	71 0 2	400	3 2 04	·34027	·33890	·33604	−28	−26	−26
40 N	413	Hurdikot ...	26 57 25	71 51 0	700	11 1 09	·33790	·33791	·33522	−26	−24	−25
	412	Kakrasar ...	26 55 36	71 12 10	750	25 1 04	·34289	·34156	·33881	−27	−25	−25
	407	Wallār ...	26 29 11	71 48 42	800	9 1 04	·34692	·34568	·34321	−25	−22	−23
	408	Mandai G.T.S. ...	26 21 10	71 10 40	1110	12 1 04	·34623	·34494	·34241	−26	−23	−23
40 O	260	Kavas ...	25 52 17	71 31 40	500	7 3 10	·34576	·34601	·34370	−24	−21	−21
	LXXIII	BĀRMER ...	25 44 35	71 26 40	650	2 2 20	·34179	·34412	·34181	−24	−21	−21
	406	Mondawla G.T.S. ...	25 24 47	71 52 10	370	3 1 04	·35156	·35041	·34827	−23	−19	−20
	910	Kunra ...	25 22 30	71 2 40	700	8 11 05	·34889	·34814	·34594	−24	−20	−20
40 P	3	Dutwa ...	24 52 50	71 28 50	100	10 11 03	·35014	·34901	·34705	−22	−18	−18
	2	Sāchor ...	24 45 20	71 45 50	200	8 11 03	·35250	·35137	·34950	−22	−17	−17
	1	Pāvdasān ...	24 29 20	71 53 50	350	6 11 03	·35257	·35149	·34979	−21	−15	−16
	923	Suigām ...	24 9 10	71 21 10	50	9 1 06	·35605	·35543	·35367	−21	−16	−16
	18	Diodar ...	24 6 30	71 46 10	200	22 12 03	·35506	·35400	·35235	−21	−15	−15
41 A	10 (*a*)	Lakhpat ...	23 49 20	68 46 50	50	2 12 03	·35145	·35023	·34829	−24	−19	−16
	11 (*a*)	Murr ...	23 33 20	68 56 40	300	5 12 03	·35216	·35094	·34905	−24	−19	−15
	919	Jakhan ...	23 13 10	68 43 10	50	16 12 05	·35338	·35268	·35085	−23	−18	−15
41 B	926	Dwārkā ...	22 14 40	68 57 10	30	27 1 06	·35609	·35545	·35389	−22	−16	−12
41 E	920	Banri ...	23 44 47	69 29 35	50	21 12 05	·35026	·34956	·34768	−23	−18	−16
	12 (*a*)	Nakhtarāna ...	23 20 50	69 15 10	400	7 12 03	·35264	·35147	·34964	−23	−18	−15
	13	Kalyānpur ...	23 13 40	69 35 40	400	9 12 03	·35575	·35464	·35292	−22	−17	−14
41 F	918	Mandvi (Cutch) ...	22 49 30	69 22 0	20	13 12 05	·35489	·35422	·35256	−22	−16	−14
	925	Salāya ...	22 18 10	69 36 20	50	24 1 06	·35793	·35734	·35584	−20	−15	−12
41 G	IX	PORBANDAR ...	21 37 43	69 36 39	30	26 12 19	·35974	·36102	·35974	−19	−13	−10
41 I	922	Lodrāni ...	23 53 50	70 37 30	100	2 1 06	·35353	·35287	·35116	−22	−16	−15
	921	Trangeribet ...	23 51 20	70 4 20	10	28 12 05	·35087	·35021	·34839	−22	−17	−16
	16 (*a*)	Ādesar ...	23 33 30	70 59 10	70	17 12 03	·35511	·35405	·35245	−21	−15	−14
	15 (*a*)	Lākadiya ...	23 20 30	70 34 40	200	14 12 03	·35168	·35062	·34902	−21	−15	−14
	14	Bhīmasar ...	23 11 20	70 9 50	90	12 12 03	·35292	·35186	·35020	−21	−16	−14
41 J	142 (*a*)	Morvi ...	22 49 20	70 50 50	150	8 3 02	·35586	·35456	·35313	−19	−13	−13
	145	Jāmnagar ...	22 28 30	70 4 20	60	15 3 02	·35880	·35744	·35600	−20	−14	−12
	143	Rājkot ...	22 18 20	70 48 40	400	28 2 10	·36212	·36225	·36104	−18	−11	−11
	924	Kālāvad ...	22 12 20	70 22 50	300	18 1 06	·35761	·35708	·35581	−18	−12	−11
41 K	150	Jām Jodhpur ...	21 54 10	70 1 50	300	29 3 02	·36030	·35908	·35775	−18	−13	−11
	144	Virpur ...	21 51 0	70 42 20	400	12 3 02	·35960	·35844	·35734	−17	−10	−10
	146	Junagad ...	21 31 50	70 27 0	200	17 3 02	·35941	·35832	·35727	−16	−10	− 9
	927	Gigasaran ...	21 17 0	70 57 10	800	6 2 06	·36215	·36171	·36088	−15	− 8	− 7
41 L	147	Verāval ...	20 54 20	7 22 30	70	13 1 13	·36202	·36238	·36154	−15	− 9	− 6
41 M	17	Vārāhi ...	23 47 50	71 26 20	40	20 12 03	·35436	·35335	·35170	−20	−15	−15
	140 (*a*)	Dhrāngadhra ...	23 0 0	71 28 40	150	4 3 02	·36264	·36141	·36004	−18	−12	−13
41 N	138 (*a*)	Limbdi ...	22 34 0	71 48 0	150	28 2 02	·35674	·35565	·35456	−16	− 9	−11
	141	Dolia ...	22 31 20	71 21 50	400	6 3 02	·36017	·35901	·35786	−17	−10	−11
	137	Ningāla ...	22 1 30	71 42 20	200	26 2 02	·36322	·36219	·36121	−15	− 8	−10
41 O	149	Chital ...	21 44 40	71 12 40	500	27 3 02	·36094	·35993	·35900	−15	− 8	− 9
	928	Ghoba ...	21 25 40	71 34 20	200	10 2 06	·36064	·36024	·35953	−14	− 6	− 7
	690	Mahuva Bandar ...	21 2 20	71 46 30	50	13 4 05	·36419	·36374	·36325	−12	− 4	− 5
41 P	691	Jāfarābād ...	20 51 50	71 22 10	50	15 4 05	·36329	·36281	·36226	−13	− 5	− 5
43 B	86	Rashkai ...	34 7 0	72 1 20	980	23 3 02	·31052	·30774	·30242	−41	−47	−50
43 O	85	Khairābād ...	33 54 10	72 13 10	990	20 11 12	·30815	·30994	·30468	−40	−46	−50
	84	Sarai Kāla ...	33 44 40	72 49 10	1690	18 3 02	·31416	·31151	·30646	−39	−45	−47
	90	Fatehjang ...	33 34 20	72 38 30	1700	31 3 02	·31484	·31221	·30716	−39	−45	−47

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			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
43 C	89	Jand ...	33 26 20	72 0 50	1170	24 11 12	·30953	·31132	·30621	−40	−46	−47
43 D	319	Chakwāl ...	32 56 10	72 51 10	1710	29 4 03	·31599	·31384	·30906	−38	−43	−44
	318	Talagang ...	32 55 50	72 25 0	1500	26 4 03	·31577	·31361	·30872	−38	−44	−45
	94	Lilla ...	32 33 0	72 44 40	670	11 4 02	·31836	·31587	·31120	−37	−42	−43
	96	Bhera ...	32 29 20	72 55 20	600	15 4 02	·32106	·31858	·31396	−37	−42	−42
	93(*a*)	Hadāli ...	32 18 40	72 10 10	610	9 4 02	·32004	·31755	·31288	−37	−42	−43
	1399	Sargodha ...	32 6 0	72 38 30	610	30 11 12	·31751	·31912	·31461	−36	−41	−41
43 F	1342	Muzaffarābād ...	34 22 10	73 27 40	2400	5 4 11	·30725	·30827	·30317	−40	−45	−48
43 G	1341	Murree ...	33 55 10	73 23 20	6300	30 3 11	·30939	·31040	·30535	−39	−45	−47
	v	RAWALPINDI ...	33 35 25	73 3 6	1700	23 11 19	·30711	·31206	·30706	−39	−45	−46
	83	Mankiala ...	33 29 0	73 14 40	1760	15 3 02	·31591	·31333	·30839	−38	−44	−46
	1340	Behari ...	33 23 20	73 43 50	1660	22 3 11	·31250	·31340	·30868	−38	−43	−44
	82	Domeli ...	33 2 6	73 28 0	1190	13 3 02	·31709	·31457	·30985	−37	−42	−44
43 H	81	Lāla Mūsa ...	32 42 40	73 57 0	830	16 11 12	·31447	·31606	·31150	−36	−41	−42
	95	Khewra ...	32 38 0	73 0 10	800	28 11 12	·31275	·31439	·30972	−37	−42	−43
	97	Hariah ...	32 34 30	73 19 30	750	17 4 02	·31829	·31587	·31131	−36	−41	−42
43 J	1345	Gurais ...	34 38 0	74 51 50	7940	27 4 11	·30529	·30629	·30141	−38	−43	−46
	1344	Shalura ...	34 29 30	74 7 40	5920	17 4 11	·30683	·30784	·30285	−39	−44	−47
	1343	Uri ...	34 5 0	74 2 50	4450	11 4 11	·30997	·31097	·30603	−39	−44	−46
	1256(*a*)	Srinagar ...	34 3 50	74 50 30	5200	12 5 11	·30976	·31075	·30598	−37	−42	−45
43 K	1346	Hirpur ...	33 40 50	74 43 0	7540	19 5 11	·31196	·31296	·30824	−37	−42	−44
	1354	Thana Mandi ...	33 32 40	74 22 0	4930	24 6 11	·31660	·31764	·31292	−37	−42	−44
	1355	Changassarai ...	33 14 40	74 15 50	2350	28 6 11	·31287	·31392	·30925	−37	−42	−43
	1353	Poni ...	33 4 50	74 41 50	2000	18 6 11	·31608	·31709	·31253	−36	−41	−42
43 L	1356	Bhimbar ...	32 58 20	74 4 50	1100	2 7 11	·31473	·31576	·31115	−36	−41	−43
	80	Jammu ...	32 43 0	74 51 20	1000	8 3 02	·32039	·31800	·31355	−35	−40	−41
	79	Sambrial ...	32 28 10	74 21 20	800	6 3 02	·32110	·31871	·31431	−35	−40	−40
	1339	Dhoda ...	32 9 50	74 41 50	800	6 3 11	·31915	·31998	·31575	−34	−38	−39
	78	Gujrānwāla ...	32 9 40	74 12 0	750	4 3 02	·32241	·32002	·31568	−35	−39	−40
43 N	1257(*a*)	Sonamarg ...	34 18 30	75 18 30	8750	6 5 11	·30833	·30932	·30455	−37	−42	−45
43 O	1348	Inshin ...	33 48 30	75 33 40	8000	27 5 11	·31168	·31267	·30806	−36	−41	−43
	1347	Islāmābād ...	33 43 50	75 8 50	5240	22 5 11	·31200	·31298	·30837	−36	−41	−43
	1349	Sof ...	33 37 0	75 17 40	6200	30 5 11	·31275	·31374	·30913	−36	−41	−43
	1350	Banihal ...	33 26 20	75 12 0	5500	2 6 11	·31357	·31456	·31000	−36	−41	−42
	1351	Ramban ...	33 13 30	75 14 40	2000	7 6 11	·31568	·31665	·31215	−35	−40	−42
43 P	1352	Udampur ...	32 55 20	75 7 30	2400	12 6 11	·31667	·31765	·31320	−35	−40	−41
	10	Pathānkot ...	32 16 30	75 38 40	1080	14 11 12	·32032	·32175	·31758	−33	−37	−39
44 A	1400	Sillanwali ...	31 49 35	72 30 40	600	2 12 12	·31962	·32119	·31679	−35	−40	−40
	320	Khair Kulan ...	31 46 50	72 11 0	570	7 5 03	·32166	·31963	·31518	−36	−40	−41
	1401	Jhang (Maghiāna) ...	31 15 30	72 19 30	510	4 12 12	·32225	·32374	·31951	−35	−38	−39
	321	Athārāuhazāri ...	31 10 30	72 5 40	480	10 5 03	·32360	·32163	·31740	−35	−38	−39
	369	Gojra ...	31 8 39	72 40 30	500	27 4 03	·32617	·32424	·32012	−34	−37	−38
44 B	370	Darkhana ...	30 39 50	72 11 10	460	29 4 03	·32791	·32604	·32203	−33	−36	−37
	74	Chichawatni ...	30 32 10	72 41 50	550	22 2 02	·33072	·32846	·32456	−33	−35	−36
	75	Kacha Khuh ..	30 22 40	72 9 10	450	24 2 02	·32870	·32644	·32254	−33	−35	−36
44 C	61	Bakhshan Khan ...	29 44 30	72 42 50	480	14 11 02	·33280	·33090	·32733	−31	−32	−33
	60	Asrani ...	29 31 30	72 8 10	460	15 11 02	·33378	·33188	·32831	−31	−32	−33
	239	Mojgarh ...	29 0 50	72 8 20	400	2 12 02	·33688	·33505	·33165	−30	−30	−32
44 D	238	Ranabhana Toba ...	28 54 31	72 38 10	450	29 11 02	·33516	·33340	·33011	−29	−29	−31
	240	Kumhāriwala ...	28 31 57	72 14 10	420	5 12 02	·33662	·33486	·33168	−29	−28	−30
	250	Pungāl ...	28 30 50	72 48 40	500	11 1 03	·33852	·33685	·33367	−28	−28	−30
	251	Angnao ...	28 6 0	72 47 0	600	14 1 03	·33980	·33813	·33517	−28	−26	−28
	23	Ranjitpura ...	28 1 0	72 7 20	480	20 2 02	·34003	·33818	·33516	−27	−27	−28
44 E	367	Kaleke ...	31 58 20	73 36 20	700	23 4 03	·32317	·32118	·31684	−35	−39	−40
	368	Chiniot Road ...	31 34 20	73 10 40	600	25 4 03	·32506	·32313	·31890	−34	−38	−39
	72	Chānga Mānga ...	31 5 30	73 56 30	650	19 2 02	·32812	·32585	·32184	−33	−36	−37
44 F	73	Gāmbar ...	30 45 19	73 19 50	600	20 2 02	·32913	·32693	·32303	−32	−35	−36
	63 (*a*)	Orki (Sujawalpur) ...	30 8 40	73 54 30	600	12 11 02	·33277	·33087	·32725	−31	−32	−34
	62	Rojhanwāli ...	30 0 50	73 15 40	500	12 4 10	·32953	·32995	·32627	−31	−33	−34
44 G	246	Ganeshgarh ...	29 45 0	73 54 0	600	28 12 02	·33392	·33212	·32861	−30	−31	−33
	247	Lalgarh ...	29 38 21	73 22 50	530	1 1 03	·33338	·33158	·32807	−30	−31	−33
	127	Sūratgarh ...	29 19 30	73 54 30	560	30 12 12	·33303	·33419	·33090	−29	−29	−31
	237	Walar ...	29 15 30	73 1 40	500	26 11 02	·33424	·33241	·32901	−30	−30	−32
	236	Balochia ...	29 14 50	73 27 20	550	23 11 02	·33571	·33394	·33059	−29	−30	−31

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			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
44 H	248	Gegra ...	28 49 10	73 15 0	600	5 1 03	·33671	·33497	·33179	−29	−28	−30
	126	Mahajan ...	28 47 40	73 50 40	640	25 1 02	·33775	·33581	·33269	−28	−27	−30
	249	Kālasar ...	28 28 0	73 15 20	700	8 1 03	·33867	·33699	·33392	−28	−27	−29
	125	Dulmera ...	28 24 20	73 39 20	660	22 1 02	·33915	·33728	·33427	−27	−26	−29
	xxix	BĪKANER ...	28 0 40	73 18 50	750	29 1 20	·33619	·33911	·33621	−27	−25	−28
44 I	98	Amritsar ...	31 38 10	74 51 30	750	11 4 08	·32345	·32321	·31909	−33	−37	−38
	xxv	LAHORE ...	31 35 50	74 18 50	700	19 11 19	·31713	·32121	·31709	−33	−37	−38
44 J	434	Ferozepore ...	30 57 52	74 36 10	650	19 4 04	·32522	·32372	·31982	−32	−35	−36
	64	Malout ...	30 11 0	74 29 40	650	10 11 02	·33264	·33080	·32718	−30	−32	−34
44 K	235	Sangaria ...	29 47 50	74 27 40	620	17 11 02	·33464	·33287	·32947	−29	−30	−32
	267	Mirjawali ...	29 20 40	74 30 20	600	1 3 03	·33614	·33445	·33116	−29	−29	−31
44 L	266	Saringsar ...	28 54 40	74 28 30	700	26 2 03	·33827	·33663	·33351	−28	−27	−30
	265	Sardārshahr ...	28 26 10	74 28 50	900	23 2 03	·33954	·33796	·33506	−27	−25	−28
	271	Fatehpur ...	28 0 30	74 57 20	1100	13 3 03	·34254	·34103	·33830	−26	−23	−27
44 M	99	Dhārīwāl ...	31 57 10	75 18 50	850	23 4 02	·32244	·32023	·31611	−33	−37	−38
	1303	Hoshiārpur ...	31 31 50	75 54 20	1100	8 4 10	·32420	·32465	·32075	−31	−35	−36
	70	Kartārpur ...	31 26 10	75 29 30	780	23 5 03	·32674	·32500	·32110	−31	−35	−36
44 N	69	Ladhowāl ...	30 59 0	75 47 20	800	25 4 04	·32902	·32761	·32388	−30	−33	−35
	435	Moga ...	30 49 40	75 10 30	720	22 4 04	·32957	·32812	·32433	−31	−34	−35
	66	Alāl ...	30 21 46	75 43 50	750	7 11 02	·33247	·33069	·32718	−29	−31	−33
	65	Bhuchchu ...	30 12 47	75 5 30	700	8 11 02	·33314	·33136	·32785	−29	−31	−33
44 O	284	Budhlāda ...	29 55 30	75 33 20	750	16 4 03	·33366	·33206	·32872	−28	−29	−32
	xliii	SIRSA ...	29 32 10	75 2 40	700	26 1 20	·33079	·33404	·33081	−28	−28	−31
	282	Adampur ...	29 17 20	75 27 50	700	12 4 03	·33619	·33465	·33153	−27	−27	−30
	281	Hānsi ...	29 5 40	75 57 0	700	10 4 03	·33857	·33702	·33401	−27	−26	−29
44 P	268	Malsisar ...	28 58 20	75 1 30	700	4 3 03	·33753	·33596	·33290	−27	−26	−30
	269	Sūrpura ...	28 40 17	75 37 0	750	7 3 03	·33964	·33813	·33523	−26	−25	−28
	270	Tamkor ...	28 26 20	75 15 10	900	10 3 03	·34149	·33998	·33714	−26	−24	−28
	275	Koharwas ...	28 15 40	75 57 30	1000	25 3 03	·34258	·34114	·33841	−25	−23	−27
45 A	252	Hodda ...	27 37 50	72 52 30	900	17 1 03	·34150	·33989	·33709	−27	−25	−26
	22	Nokh ...	27 33 30	72 15 20	580					−27	−25	−27
	253	Ranisar ...	27 12 40	72 42 40	880	20 1 03	·34231	·34076	·33813	−26	−23	−25
	21 (*a*)	Phalodi ...	27 7 30	72 21 20	790	24 1 09	·34151	·34153	·33884	−26	−24	−25
45 B	20	Asolai ...	26 42 10	72 15 50	900	27 11 08	·33944	·33942	·33690	−25	−22	−24
	255	Khethasar ...	26 41 0	72 49 20	900	26 1 03	·34665	·34517	·34276	−25	−21	−23
	19 (*a*)	Sai ...	26 16 50	72 16 20	850	4 2 02	·35118	·34945	·34709	−25	−21	−22
45 C	258	Dundāra ...	25 53 40	72 47 50	540	3 2 03	·34753	·34617	·34398	−23	−19	−21
	259	Bālotra ...	25 50 10	72 14 40	360	5 2 03	·35123	·34981	·34756	−24	−20	−21
	405	Jalar ...	25 21 10	72 36 50	530	31 12 03	·35064	·34954	·34757	−22	−17	−19
45 D	404	Lohana ...	24 47 20	72 27 10	900	28 12 03	·35363	·35258	·35083	−21	−15	−17
	148	Abu Road ...	24 29 0	72 46 40	860	4 3 10	·35347	·35362	·35204	−21	−13	−16
	118	Roho ...	24 24 20	72 38 20	740	6 1 02	·35543	·35396	·35238	−21	−13	−16
	117	Deesa ...	24 14 30	72 10 40	450	4 1 02	·35572	·35425	·35266	−21	−14	−15
45 E	123	Bikasar ...	27 34 20	73 28 0	1040	18 1 02	·34320	·34139	·33871	−26	−23	−26
	254	Panchora ...	27 6 40	73 13 30	1100	23 1 03	·34429	·34280	·34023	−25	−22	−25
	122	Mūndwa ...	27 3 50	73 48 30	1090	16 1 02	·34501	·34327	·34081	−25	−21	−24
45 F	121	Khāngta ...	26 33 30	73 37 20	980	27 12 12	·34500	·34580	·34345	−24	−20	−23
	256	Jodhpur ...	26 16 20	73 1 30	780	29 1 03	·34801	·34659	·34429	−24	−20	−22
45 G	132	Sojat Road ...	25 52 0	73 45 10	1000	8 2 02	·34983	·34824	·34622	−23	−17	−20
	257	Marwar Pāli ...	25 47 50	73 19 30	720	31 1 03	·34932	·34796	·34594	−23	−17	−20
	120	Rāni ...	25 21 10	73 18 20	920	11 1 02	·35204	·35051	·34866	−22	−15	−19
	633	Lāwa ...	25 14 10	73 59 30	1800	25 2 05	·35083	·35002	·34834	−21	−13	−18
45 H	119(*a*)	Pindwāra ...	24 48 0	73 2 10	1220	2 1 13	·35041	·35097	·34928	−21	−14	−17
	I	UDAIPUR ...	24 34 42	73 42 46	1900	9 2 20	·35129	·35272	·35131	−20	−11	−15
	634	Bichabhera ...	24 16 20	73 22 50	1650	4 3 05	·35487	·35410	·35269	−20	−11	−15
45 I	264	Bana ...	27 58 40	74 1 50	990	20 2 03	·34121	·33969	·33690	−26	−24	−27
	272	Singrawat ...	27 26 10	74 52 50	1300	16 3 03	·34509	·34364	·34113	−25	−21	−25
	263	Dugoli ...	27 22 0	74 10 20	1000	17 2 03	·34385	·34238	·33981	−25	−22	−25
45 J	128	Gachhipura ...	26 57 20	74 27 50	1100	30 1 02	·34617	·34451	·34211	−24	−20	−24
	xxx	AJMER ...	26 27 30	74 38 30	1600	6 2 20	·34442	·34656	·34444	−23	−17	−22
	131(*a*)	Beāwar ...	26 26 40	74 18 30	1400	7 2 02	·34902	·34743	·34536	−23	−17	−21
45 K	160	Māndal ...	25 26 50	74 35 10	1450	12 2 13	·34668	34721	·34554	−21	−13	−18

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
45 L	159	Kapasin ...	24 51 30	74 18 40	1500	15 4 02	·35300	·35166	·35020	−20	−11	−16
	158	Nimbahera ...	24 37 20	74 41 40	1500	7 3 09	·35279	·35281	·35152	−19	−9	−15
	640	Kānor ...	24 26 0	74 16 10	1630	25 3 05	·35442	·35370	·35241	−19	−9	−15
45 M	274	Gūdha ...	27 51 40	75 31 40	1700	23 3 03	·34324	·34180	·33918	−25	−22	−26
	277	Shahpura ...	27 23 30	75 58 0	1700	31 3 03	·34403	·34271	·34031	−23	−20	−24
	273	Khatu ...	27 22 10	75 24 10	1500	19 3 03	·34397	·34258	·34018	−24	−20	−24
45 N	162	Jaipur ...	26 55 0	75 47 0	1300	16 2 13	·34470	·34544	·34326	−23	−18	−22
	129	Sāmbhar ...	26 54 20	75 11 10	1200	1 2 02	·34685	·34526	·34303	−23	−18	−23
	161	Naraina ...	26 47 30	75 11 50	1200	19 4 02	·34675	·34521	·34303	−23	−18	−22
	608	Jhalāi ...	26 21 30	75 59 50	1000	23 11 04	·35103	·35017	·34827	−21	−15	−20
	609	Mālpura ...	26 17 0	75 22 10	1100	26 11 04	·34822	·34732	·34536	−22	−16	−20
45 O	610	Awan ...	25 48 0	75 36 20	1050	29 11 04	·34976	·34890	·34722	−21	−13	−18
	612	Kotah ...	25 11 30	75 51 40	860	6 4 10	·35218	·35231	·35091	−19	−10	−16
45 P	613	Singoli ...	24 58 10	75 17 20	1200	10 12 04	·35227	·35150	·35021	−19	−9	−15
	614	Rāmpura ...	24 27 40	75 26 40	1400	13 12 04	·35710	·35641	·35529	−17	−7	−14
	157	(Panth) Pīplia .	24 12 20	75 0 40	1500	15 2 09	·35888	·35889	·35788	−17	−6	−13
	616	Kundlo ...	24 2 0	75 53 30	1600	20 12 04	·35705	·35644	·35560	−15	−4	−12
46 A	116 (*a*)	Kherālu ...	23 52 40	72 37 20	550	1 1 02	·35675	·35542	·35406	−19	−11	−14
	116	Pātan ...	23 51 0	72 8 10	260	27 12 01	·35644	·35504	·35362	−20	−12	−14
	114	Jagudan ...	23 30 50	72 24 0	290	5 1 13	·35401	·35445	·35314	−18	−11	−13
	113	Parāntij ...	23 25 40	72 51 50	370	21 12 01	·35875	·35756	·35637	−17	−9	−13
	XXXII	VIRAMGĀM ...	23 8 10	72 3 30	90	23 12 19	·35545	·35670	·35545	−18	−10	−13
46 B	112	Bārejadi ...	22 53 40	72 40 20	120	20 12 01	·35837	·35724	·35627	−16	−7	−11
	111	Cambay ...	22 19 20	72 38 0	40	17 12 01	·36176	·36077	·35997	−14	−5	−10
46 C	136	Bhāvnagar ...	21 46 40	72 7 40	20	15 1 13	·36558	·36578	·36508	−13	−5	−8
	XXVIII	SACHIN ...	21 4 40	72 52 40	40	30 12 19	·36501	·36521	·36501	−10	0	−4
46 D	104	Pārdi ...	20 31 0	72 55 40	50	30 11 01	·36481	·36417	·36418	−9	+1	−1
46 E	635	Dhandolia ...	23 42 10	73 19 50	700	8 3 05	·35584	·35515	·35402	−18	−8	−13
	637	Ghatanogam ...	23 35 30	73 53 50	600	14 3 05	·35720	·35655	·35554	−17	−6	−13
	636	Debhari ...	23 15 20	73 30 10	360	11 3 05	·35810	·35749	·35653	−16	−6	−12
46 F	153	Chanchēlāo ...	22 47 50	73 42 40	500	5 4 02	·35916	·35822	·35754	−14	−3	−10
	152	Dākor ...	22 45 10	73 9 10	170	3 4 02	·36023	·35929	·35844	−14	−5	−11
	109	Bodeli ...	22 16 20	73 42 50	250	13 12 01	·36477	·36392	·36340	−12	−2	−8
	110	Itola ...	22 9 10	73 9 40	90	17 1 13	·36080	·36092	·36034	−13	−3	−8
	626	Artia ...	22 2 40	73 58 20	900	26 1 05	·36514	·36471	·36436	−11	0	−7
46 G	108	Nāndod ...	21 53 20	73 28 30	150	11 12 01	·36306	·36228	·36192	−11	−1	−6
	107 (*a*)	Anklesvar ...	21 37 30	73 0 30	60	9 12 01	·36511	·36433	·36391	−11	−2	−6
	106	Fort Songhad ...	21 8 50	73 33 30	400	4 12 01	·36849	·36785	·36776	−9	+1	−3
46 H	630	Baphlun ...	20 32 50	73 29 30	1700	12 2 05	·36380	·36349	·36362	−8	+3	−1
	631	Kanāsi ...	20 31 30	73 52 0	2000	15 2 05	·36583	·36556	·36580	−7	+4	0
	629	Peint ...	20 15 20	73 29 10	1900	9 2 05	·36762	·36735	·36759	−7	+4	0
	628	Girdan ...	20 5 20	73 25 50	1200	6 2 05	·36338	·36311	·36340	−7	+4	+1
	224	Khervādi ...	20 2 50	73 58 10	1810	21 4 03	·36641	·36613	·36653	−5	+5	+2
46 I	639	Mānpur ...	23 59 50	74 14 40	630	20 3 05	·35910	·35842	·35735	−18	−7	−13
	638	Bānswāra ...	23 33 10	74 25 50	780	17 3 05	·35900	·35839	·35755	−16	−4	−12
	155	Bhairongarh ...	23 9 0	74 46 40	1250	8 4 02	·37113	·37019	·36957	−14	−2	−10
46 J	154	Dohad ...	22 50 20	74 14 50	1000	7 4 02	·35998	·35910	·35848	−13	−2	−10
	625	Sondwa ...	22 7 10	74 22 20	500	23 1 05	·36228	·36189	·36165	−10	+1	−6
	624	Chikalda ...	22 5 0	74 52 40	460	20 1 05	·36352	·36312	·36294	−10	+2	−6
46 K	554	Nandurbār ...	21 22 30	74 14 40	750	19 12 03	·36290	·36250	·36247	−8	+2	−3
	553	Sindkheda ...	21 14 13	74 44 20	560	16 12 03	·36762	·36727	·36741	−7	+4	−2
46 L	226	Dhūlia ...	20 53 10	74 46 20	850	25 4 03	·36689	·36655	·36680	−6	+5	−1
	632	Jaykhera ...	20 47 40	74 12 10	2000	18 2 05	·36740	·36713	·36732	−7	+4	−1
	XLI	MANMĀD ...	20 14 40	74 26 20	1900	10 1 20	·36678	·36638	·36678	−5	+5	+2
46 M	1327	Alot ...	23 45 30	75 32 40	1500	2 4 10	·35751	·35755	·35682	−14	−3	−11
	156	Jaorā ...	23 38 0	75 7 0	1500	6 2 13	·35649	·35661	·35583	−15	−3	−12
	558	Barnagar ...	23 3 50	75 22 30	1600	3 1 04	·35958	·35898	·35853	−12	0	−9
46 N	LVI	INDORE ...	22 42 8	75 52 40	1800	13 2 20	·36718	·36742	·36719	−11	+2	−7
	623	Dhār ...	22 36 0	75 18 30	1930	5 12 08	·36740	·36739	·36710	−11	+1	−7
	622	Khal Ghat ...	22 8 50	75 27 10	500	19 1 09	·33777	·33777	·33770	−9	+3	−5
46 O	621	Bistān ...	21 41 50	75 40 10	1040	10 3 09	·37611	·37610	·37625	−7	+5	−3
	929	Sendhwa ...	21 40 50	75 5 20	1330	18 2 06	·36692	·36669	·36667	−8	+3	−4
	XVI	BHUSĀWAL ...	21 3 40	75 47 0	650	13 1 20	·36805	·36769	·36805	−5	+6	0

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation.	Value corrected to date.	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
46 O	555	Jālgaon ...	21 1 20	75 33 40	670	21 12 03	·36548	·36523	·36559	− 5	+ 6	0
46 P	227	Chalisgaon ...	20 27 30	75 1 0	1140	27 4 03	·36628	·36600	·36641	− 5	+ 6	+ 1
	1161	Sillod ...	20 18 40	75 38 50	2000	15 11 07	·36895	·36890	·36947	− 4	+ 7	+ 3
47 A	103	Dāhānu Road ...	19 58 40	72 44 40	30	20 1 13	·36726	·36718	·36735	− 8	+ 2	+ 1
	102	Virār ...	19 27 10	72 48 30	20	27 11 01	·36417	·36367	·36406	− 7	+ 4	+ 3
47 B		**ALIBAG OBSY.** ...	18 38 17	72 52 26	20	...	...	·36793	·36857	− 5	+ 6	+ 6
	689	Revadanda ...	18 32 20	72 57 0	0	21 11 09	·36783	·36778	·36844	− 5	+ 6	+ 6
47 E	627	Jawhār ...	19 54 0	73 13 30	1520	3 2 05	·36757	·36730	·36759	− 7	+ 4	+ 1
	225	Igatpuri ...	19 41 20	73 34 40	1920	23 4 03	·36458	·36430	·36475	− 5	+ 5	+ 3
	169	Kalyān ...	19 15 0	73 8 20	30	15 1 10	·36749	·36744	·36794	− 5	+ 5	+ 4
	1322	Narayangaon ...	19 6 40	73 58 10	2130	25 1 10	·36834	·36827	·36894	− 4	+ 7	+ 5
	1320	Ghoda ...	19 3 10	73 49 50	2100	21 1 10	·36783	·36776	·36843	− 4	+ 7	+ 5
	648	Manchar ...	19 0 30	73 56 40	2100	19 1 10	·36909	·36902	·36969	− 4	+ 7	+ 5
47 F	1319	Khed ...	18 51 30	73 53 20	2000	17 1 10	·36914	·36907	·36979	− 4	+ 7	+ 6
	170 (*a*)	Lonāvla ...	18 44 40	73 23 40	2000	5 2 14	·37313	·37282	·37348	− 4	+ 6	+ 6
	171 (*a*)	Kirkee ...	18 33 30	73 50 0	1840	28 12 13	·36894	·36864	·36935	− 4	+ 6	+ 7
47 G	688	Bānkot ...	17 58 20	73 2 30	30	23 11 09	·36757	·36751	·36833	− 4	+ 7	+ 8
	436	Mahābaleshwar ...	17 55 50	73 39 40	4560	8 11 03	·36812	·36797	·36890	− 3	+ 8	+ 9
	687	Dābhol ...	17 35 20	73 10 0	0	25 11 09	·37158	·37151	·37244	− 4	+ 8	+ 9
	437	Helwak ...	17 22 20	73 43 10	2500	14 11 03	·37123	·37108	·37217	− 3	+ 9	+ 11
	1313	Jaygad ...	17 17 50	73 13 20	0	27 11 09	·37174	·37167	·37265	− 3	+ 8	+ 10
47 H	686	Ratnāgiri ...	16 59 10	73 18 50	200	28 11 09	·37583	·37575	·37684	− 3	+ 9	+ 11
	438	Amba ...	16 58 20	73 47 50	2500	21 11 03	·37154	·37144	·37264	− 2	+ 10	+ 12
	1314	Mūsā-Kazi-Bandar ...	16 37 10	73 20 0	200	1 12 09	·37460	·37451	·37576	− 2	+ 10	+ 13
	439	Dajeepur ...	16 22 40	73 52 40	2500	26 11 03	·37548	·37543	·37679	− 1	+ 11	+ 14
	686	Devgarh ...	16 21 50	73 21 50	200	2 12 09	·36772	·36763	·36888	− 2	+ 10	+ 13
	1315	Mālvan ...	16 3 30	73 27 20	0	4 12 09	·37427	·37418	·37548	− 2	+ 10	+ 14
47 I	371	Ratagaon or (Vaijāpur)	19 56 40	74 45 50	1800	3 2 10	·37036	·37028	·37085	− 4	+ 7	+ 3
	222	Puntāmba ...	19 45 40	74 37 20	1600	1 2 10	·36676	·36668	·36730	− 4	+ 7	+ 4
	649	Sangamner ...	19 34 20	74 13 30	1900	29 1 10	·36756	·36749	·36805	− 4	+ 6	+ 4
	1325	Miri ...	19 17 0	74 58 0	1800	22 2 10	·36923	·36914	·36992	− 3	+ 8	+ 6
	221	Ahmadnagar ...	19 4 20	74 43 10	2130	25 2 10	·37030	·37021	·37099	− 3	+ 8	+ 6
	1321	Singwa ...	19 0 0	74 4 20	2000	24 1 10	·37033	·37026	·37098	− 4	+ 7	+ 6
47 J	XXXIII	DHOND ...	18 28 0	74 35 10	1690	28 11 19	·37155	·37068	·37156	− 2	+ 8	+ 8
	220	Rajewadi ...	18 23 0	74 8 30	2300	9 1 10	·36889	·36881	·36969	− 3	+ 8	+ 8
47 K	672	Nāteputa ...	17 54 10	74 45 30	1800	31 1 05	·37131	·37127	·37237	− 1	+ 10	+ 10
	219	Wathar ...	17 53 20	74 8 10	2500	7 1 10	·37067	·37058	·37157	− 2	+ 9	+ 9
	673	Kaledhon ...	17 26 0	74 37 40	2400	5 2 05	·37368	·37364	·37479	− 1	+ 10	+ 11
	218	Karād ...	17 18 40	74 13 10	1900	5 1 10	·37364	·37354	·37469	− 2	+ 10	+ 11
47 L	XL	MIRĀJ ...	16 49 10	74 38 10	1800	30 11 19	·37779	·37649	·37780	0	+ 11	+ 13
	217	Kolhāpur ...	16 41 50	74 14 10	1850	2 1 10	·37560	·37549	·37680	− 1	+ 11	+ 13
	215	Gokāk Road ...	16 14 0	74 44 40	2000	29 12 09	·37640	·37627	·37780	0	+ 13	+ 15
47M	373	Jālna ...	19 51 50	75 53 0	1600	14 2 10	·36984	·36974	·37053	− 3	+ 9	+ 5
	372	Aurangābād ...	19 51 30	75 20 20	1800	12 2 10	·36937	·36928	·36996	− 3	+ 8	+ 4
	1323	Jamkhed ...	19 39 40	75 39 0	1700	17 2 10	·37054	·37044	·37123	− 3	+ 9	+ 5
	1324	Paithān ...	19 28 30	75 22 50	1550	18 2 10	·37202	·37193	·37266	− 3	+ 8	+ 5
	651	Shagad ...	19 22 0	75 42 40	1400	19 11 04	·37254	·37246	·37330	− 2	+ 9	+ 6
	650	Shevgaon ...	19 21 20	75 14 0	1600	20 2 10	·37035	·37026	·37104	− 3	+ 8	+ 6
47 N	660	Mīrajgaon ...	18 44 0	75 1 20	1860	22 12 04	·37099	·37091	·37180	− 2	+ 9	+ 7
	652	Chousalla ...	18 42 50	75 41 40	2100	22 11 04	·36899	·36895	·36995	− 1	+ 10	+ 8
	173	Jeur ...	18 15 50	75 9 40	1710	2 3 10	·37195	·37183	·37288	− 1	+ 10	+ 9
	174	Bārsi ...	18 14 30	75 42 20	1800	7 3 10	·37188	·37175	·37291	0	+ 11	+ 10
47 O	671	Pandharpur ...	17 39 40	75 19 30	1600	4 3 10	·37227	·37214	·37335	0	+ 11	+ 11
	670	Jath ...	17 3 40	75 12 0	2200	24 1 05	·37455	·37455	·37592	0	+ 12	+ 13
47 P	661	Bijāpur ...	16 50 0	75 43 20	1950	19 3 10	·37326	·37310	·37463	+ 2	+ 13	+ 15
	669	Jamkhandi ...	16 30 50	75 17 10	1800	20 1 05	·37827	·37831	·37984	+ 1	+ 13	+ 15
	667	Almati ...	16 21 10	75 53 20	1700	23 3 10	·37590	·37571	·37741	+ 2	+ 15	+ 16
	668	Karkop ...	16 1 10	75 6 0	2100	17 1 05	·37718	·37722	·37886	+ 1	+ 14	+ 16
48 E	684	Vengurla ...	15 51 30	73 37 20	0	7 12 09	·37557	·37547	·37688	− 1	+ 11	+ 15
	212	Marmagao ...	15 24 20	73 47 20	20	9 12 09	·37502	·37491	·37643	0	+ 12	+ 16
48 I	214	Belgaum ...	15 50 30	74 31 10	2500	27 12 09	·37370	·37357	·37515	+ 1	+ 13	+ 16
	440	Ramghat ...	15 49 40	74 6 20	2700	3 12 03	·36587	·36587	·36739	0	+ 12	+ 16
	213	Castle Rock ...	15 24 0	74 18 50	1700	26 12 09	·38144	·38131	·38294	0	+ 13	+ 17
48 J	441	Yellāpur ...	14 57 40	74 42 30	1800	9 12 03	·37619	·37629	·37814	+ 2	+ 15	+ 19
	683	Kārwār ...	14 47 31	74 7 20	10	13 12 09	·37681	·37668	·37842	+ 1	+ 14	+ 18

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES		
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	1902-09 γ	1909-15 γ	1915-20 γ
48 J	1318	Tadri ...	14 31 20	74 21 30	0	22 12 09	·37471	·37456	·37641	+ 1	+ 15	+ 19
	682	Kūmta ...	14 26 0	74 24 50	0	19 12 09	·38486	·38471	·38656	+ 1	+ 15	+ 19
	1317	Chundanver ...	14 23 40	74 29 0	100	18 12 09	·37620	·37605	·37795	+ 2	+ 15	+ 20
	1316	Honāvar ...	14 16 40	74 26 30	0	16 12 09	·37611	·37597	·37787	+ 2	+ 15	+ 20
48 K	681	Bhatkal ...	13 59 30	74 32 0	150	16 3 05	·37418	·37426	·37627	+ 2	+ 16	+ 21
	680	Cūndapur ...	13 37 30	74 41 40	0	11 3 05	·37908	·37919	·38131	+ 3	+ 17	+ 22
	679	Udipi ...	13 20 40	74 44 20	200	8 3 05	·37608	·37619	·37842	+ 3	+ 18	+ 23
48 L	678	Mangalore ...	12 52 0	74 49 40	100	5 3 05	·37498	·37513	·37741	+ 4	+ 18	+ 24
	677	Kāsaragod ...	12 30 3	74 59 40	100	2 3 05	·38142	·38157	·38396	+ 4	+ 19	+ 25
48 M	666	Alūr ...	15 49 30	75 39 0	2000	26 3 10	·37754	·37735	·37915	+ 3	+ 15	+ 18
	VIII	DHĀRWĀR ...	15 26 36	75 0 10	2400	4 12 19	·37850	·37677	·37851	+ 2	+ 14	+ 18
	665	Gadag ...	15 25 10	75 38 10	2170	28 3 10	·37563	·37543	·37734	+ 3	+ 16	+ 19
	211	Yaivigi ...	15 1 50	75 25 0	2100	19 3 03	·37567	·37584	·37775	+ 3	+ 16	+ 19
48 N	210	Rānībennur ...	14 37 0	75 38 30	1800	17 3 03	·37767	·37790	·38003	+ 4	+ 18	+ 21
	442	Banavāsi ...	14 32 20	75 1 10	1900	13 12 03	·37690	·37705	·37901	+ 3	+ 16	+ 20
48 O	443	Manvinhala ...	13 59 10	75 6 20	2100	17 12 03	·37739	·37754	·37966	+ 3	+ 17	+ 22
	208	Shimoga ...	13 55 30	75 34 0	2000	13 3 03	·37708	·37731	·37960	+ 4	+ 19	+ 23
	XXXIX	BIRUR ...	13 35 50	75 58 10	2500	7 12 19	·38143	·37900	·38145	+ 5	+ 20	+ 25
	444	Koppa ...	13 31 50	75 19 30	2200	22 12 03	·37826	·37846	·38080	+ 4	+ 19	+ 24
48 P	445	Beltangadi ...	12 59 10	75 17 0	300	28 12 03	·37786	·37811	·38056	+ 5	+ 20	+ 25
	447	Sakleshpur ...	12 56 40	75 47 30	3000	6 1 04	·37834	·37864	·38120	+ 6	+ 21	+ 26
	446	Sullia ...	12 34 20	75 23 20	300	31 12 03	·37766	·37791	·38041	+ 5	+ 20	+ 26
	200	Vottekolli ...	12 7 20	75 50 20	3000	21 2 03	·37786	·37821	·38088	+ 6	+ 22	+ 27
	676	Kuvoy ...	12 5 40	75 11 30	0	27 2 05	·38035	·38054	·38304	+ 5	+ 20	+ 26
49 M	XXXVIII	CANNANORE ...	11 52 30	75 22 0	70	19 12 19	·38246	·37986	·38247	+ 6	+ 21	+ 27
	198	West Hill ...	11 17 10	75 45 20	60	13 2 03	·38596	·38637	·38914	+ 7	+ 22	+ 29
52 B	1258	Mulbekh ...	34 23 2	76 21 29	11000					− 36	− 41	− 43
52 D	1301	Dharmsāla ...	32 12 0	76 19 30	4000	2 4 10	·32088	·32133	·31727	− 32	− 36	− 38
	1300	Pālampur ...	32 7 20	76 32 20	5500	30 3 10	·32148	·32193	·31792	− 31	− 36	− 37
52 F	1260	Pānāmik ...	34 47 0	77 33 40	8500					− 34	− 40	− 42
	1259	Leh ...	34 9 30	77 34 15	11500					− 33	− 39	− 41
52 I	1261	Kizil Langar ...	35 12 0	78 0 55	16000					− 34	− 40	− 43
53 A	1299	Urla ...	31 55 20	76 53 10	4000	27 3 10	·32398	·32441	·32046	− 30	− 35	− 37
	1302	Dera Gopipur ...	31 52 50	76 12 30	1500	5 4 10	·32325	·32371	·31970	− 31	− 36	− 37
	1286	Hamīrpur ...	31 41 10	76 31 20	2000	15 2 10	·32477	·32516	·32126	− 31	− 35	− 36
	1287	Galma ...	31 36 0	76 52 30	3000	18 2 10	·32508	·32547	·32163	− 30	− 34	− 36
	1285	Bubhor ...	31 24 30	76 22 20	1300	10 2 10	·32637	·32675	·32291	− 30	− 34	− 36
	1289	Sema or Semu ...	31 11 50	76 55 30	4300	25 2 10	·32756	·32793	·32426	− 29	− 32	− 35
	1284	Abiana ...	31 5 30	76 33 10	1000	7 2 10	·32811	·32847	·32474	− 29	− 33	− 35
53 B	287	Tokara ...	30 50 50	76 55 20	2100	4 2 10	·32909	·32943	·32587	− 29	− 31	− 34
	68	Sirhind ...	30 37 40	76 22 40	870	25 5 03	·33198	·33036	·32680	− 29	− 31	− 34
	67	Patiāla ...	30 20 40	76 24 0	800	13 4 10	·33130	·33169	·32824	− 28	− 30	− 33
	101	Kesri ...	30 15 50	76 55 30	900	28 4 02	·33422	·33235	·32901	− 28	− 29	− 32
53 C	234	Tarāori ...	29 48 20	76 56 0	850	14 11 02	·33651	·33486	·33169	− 27	− 27	− 31
	285	Kalayat ...	29 41 10	76 13 40	760	18 4 03	·33417	·33263	·32940	− 27	− 28	− 31
	286	Karainthi ...	29 1 10	76 29 0	730	19 4 03	·33920	·33772	·33477	− 26	− 25	− 29
53 D	280	Dādri ...	28 36 10	76 16 40	800	8 4 03	·33950	·33807	·33523	− 25	− 24	− 28
	279	Rewāri ...	28 12 20	76 36 20	900	7 4 03	·34323	·34185	·33923	− 24	− 22	− 26
53 E	1298	Bajaora ...	31 50 50	77 9 50	3600	23 3 10	·32363	·32405	·32021	− 30	− 34	− 36
	1297	Manglaur ...	31 40 0	77 17 50	3800	20 3 10	·32437	·32477	·32099	− 30	− 33	− 36
	1296	Kot ...	31 31 0	77 25 10	7600	18 3 10	·32508	·32608	·32235	− 29	− 33	− 35
	1294	Rāmpur ...	31 26 50	77 38 0	2800	12 3 10	·32627	·32665	·32298	− 29	− 32	− 35
	1288	Pangna ...	31 23 10	77 7 20	4000	21 2 10	·32814	·32852	·32479	− 29	− 33	− 35
	1295	Kotgarh ...	31 18 40	77 28 50	6500	16 3 10	·32754	·32793	·32426	− 29	− 32	− 35
	1293	Sungri ...	31 18 40	77 41 50	8000	10 3 10	·32713	·32750	·32389	− 29	− 31	− 35
	1292	Hat Koti ...	31 8 0	77 44 50	5000	7 3 10	·32895	·32932	·32576	− 28	− 31	− 34
	1290	Jutogh ...	31 6 20	77 6 0	5800	28 2 10	·32762	·32799	·32437	− 29	− 32	− 34
	1291	Bagund ...	31 6 7	77 27 30	5000	4 3 10	·32857	·32893	·32537	− 28	− 31	− 34
53 F	1283	Nāhan ...	30 33 30	77 17 50	2990	31 1 10	·33131	·33164	·32819	− 28	− 30	− 33
	165	Ambari ...	30 29 20	77 48 20	1570					− 27	− 28	− 32
	164	Jhajra ...	30 20 30	77 54 50	1800					− 26	− 28	− 32
	166	Mirzāpur ...	30 15 30	77 37 40	1150					− 27	− 28	− 32
	167	Ghuna ...	30 3 50	77 34 40	930					− 26	− 27	− 31
	168	Fatehpur ...	30 2 40	77 45 40	980					− 26	− 27	− 31

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
53 G	229	Sahāranpur ...	29 57 50	77 32 40	900	4 11 02	·33622	·33462	·33145	−26	−27	−31
	230	Muzaffarnagar ...	29 28 30	77 42 0	800	6 11 02	·33875	·33721	·33426	−25	−25	−29
	233	Samālkha ...	29 14 40	77 0 10	750	12 11 02	·33868	·33709	·33414	−26	−25	−29
53 H	231	Meerut City ...	28 58 40	77 41 0	730	8 11 02	·34048	·33901	·33617	−24	−24	−28
	XLII	DELHI ...	28 40 15	77 13 48	680	23 1 20	·33719	·33904	·33721	−24	−23	−27
	600	Chola ...	28 18 30	77 43 40	660	20 4 04	·34191	·34083	·33827	−23	−21	−26
	1186	Palwal ...	28 8 50	77 19 50	650	2 5 08	·34245	·34230	·33979	−23	−21	−25
53 I	1336	Jhala ...	31 1 50	78 42 50	7000	9 5 11	·32845	·32913	·32574	−26	−29	−33
53 J	1337	Barahat ...	30 44 30	78 27 10	5000	18 5 11	·32945	·33012	·32684	−26	−28	−32
	1331	Mussoorie ...	30 27 40	78 5 10	6600	14 9 13	·33056	·33188	·32860	−26	−28	−32
	1282	Tehri ...	30 23 10	78 28 40	2200	20 1 10	·33261	·33290	·32968	−26	−27	−32
		DEHRA DUN OBSY.	30 19 19	78 3 19	2230	...	...	·33280	·32954	−26	−28	−32
	1281	Dungripont ...	30 14 10	78 52 0	1850	13 1 10	·33359	·33386	·33075	−25	−26	−31
53 K	1268	Pokhra ...	29 54 50	78 55 40	4000	24 11 09	·33566	·33589	·33289	−24	−25	−30
	1267	Chaumasū ...	29 54 0	78 44 0	3000	22 11 09	·33547	·33569	·33269	−24	−25	−30
	1266	Lansdowne ...	29 49 36	78 41 20	5600	20 11 09	·33538	·33560	·33260	−24	−25	−30
	228	Laksar ...	29 45 20	78 1 20	780	3 11 02	·33741	·33587	·33281	−25	−26	−30
	602	Nagina ...	29 25 50	78 25 0	800	26 4 04	·33807	·33695	·33406	−24	−24	−29
53 L	601	Morādābād ...	28 50 0	78 45 30	640	23 4 04	·34139	·34036	·33775	−22	−21	−27
	599	Garhmuktesar ...	28 46 43	78 4 0	700	18 4 04	·34060	·33952	·33685	−23	−22	−27
	587	Dhanāri ...	28 19 50	78 30 20	600	18 3 04	·34356	·34256	·34011	−21	−20	−25
53 N	1280	Simili ...	30 13 50	79 15 20	2400	8 1 10	·33414	·33440	·33135	−24	−25	−31
53 O	1278	Kofkote ...	29 57 0	79 53 40	3400	31 12 09	·33640	·33663	·33380	−22	−23	−29
	1279	Baijnāth ...	29 54 40	79 36 50	3400	4 1 10	·33597	·33620	·33337	−23	−23	−29
	1269	Saraikhet ...	29 53 10	79 4 40	5000	27 11 09	·33572	·33594	·33300	−23	−24	−30
	1270	Masi ...	29 49 0	79 16 50	3000	30 11 09	·33621	·33643	·33354	−23	−24	−29
	1271	Rānīkhet ...	29 38 50	79 26 0	5900	3 12 09	·33680	·33701	·33418	−23	−23	−29
	1272	Almorā ...	29 35 50	79 40 10	5500	6 12 09	·33719	·33740	·33468	−22	−22	−28
	1273	Maurnala ...	29 27 13	79 47 0	6000	10 12 09	·33772	·33792	·33526	−21	−21	−28
	1265	Rāmnagar ...	29 23 30	79 7 20	1200	15 11 09	·33716	·33735	·33463	−23	−22	−28
	LVIII	KĀTHGODĀM ...	29 15 19	79 32 50	1680	23 3 20	·33545	·33812	·33551	−21	−21	−27
53 P	1304	Khatema ...	28 54 50	79 58 10	650	24 11 09	·34171	·34188	·33944	−20	−19	−26
	597	Richha Road ...	28 43 0	79 29 30	630	12 4 04	·34345	·34246	·33996	−21	−20	−26
	588	Aonla ...	28 17 50	79 10 10	550	19 3 04	·34377	·34281	·34047	−20	−19	−24
	589	Mirānpur Katra ...	28 2 20	79 40 20	520	21 3 04	·34528	·34442	·34225	−18	−17	−23
54 A	276	Nangal Chaudhri ...	27 53 30	76 6 20	1000	28 3 03	·34394	·34256	·34005	−24	−21	−25
	278	Alwar ...	27 33 40	76 38 0	900	5 4 03	·34517	·34385	·34151	−23	−19	−24
	163	Ārnu ...	27 0 0	76 28 50	1000	23 4 02	·34763	·34616	·34404	−22	−17	−22
54 B	607	Gangāpur ...	26 28 50	76 44 20	1000	20 11 04	·34880	·34794	·34604	−21	−15	−20
	1329	Siwai Madhopur ...	26 1 30	76 21 0	950	8 4 10	·34886	·34903	·34735	−20	−13	−18
54 C	611	Indargarh ...	25 43 50	76 11 0	700	2 12 04	·35045	·34963	·34806	−20	−12	−17
	LIV	BĀRAN ...	25 5 32	76 30 30	850	19 2 20	·35116	·35236	·35118	−17	−8	−14
54 D	1328	Darah ...	24 50 0	76 0 50	1200	4 4 10	·35409	·35419	·35301	−17	−8	−14
	615	Jhālrapātān ...	24 36 0	76 9 20	1020	16 12 04	·35501	·35436	·35335	−16	−6	−13
	617	Khilchipur ...	24 2 0	76 34 20	1300	23 12 04	·35980	·35924	·35851	−14	−3	−11
54 E	1185	Nāndgaon ...	27 42 50	77 23 10	600	29 4 08	·34460	·34445	·34211	−22	−19	−24
	VI	BHARATPUR ...	27 13 53	77 29 24	650	22 2 20	·34338	·34553	·34341	−21	−17	−22
	585	Kherli ...	27 12 10	77 1 30	750	10 3 04	·34684	·34578	·34360	−22	−18	−22
54 F	1330	Hindaun ...	26 45 30	77 2 10	1000	9 4 10	·34674	·34694	·34498	−21	−16	−20
	569	Dholpur ...	26 41 50	77 54 20	600	28 1 04	·34961	·34867	·34688	−19	−14	−19
	606	Manakhar ...	26 24 30	77 16 10	1100	17 11 04	·35663	·35581	·35402	−20	−14	−19
	605	Birpur ...	26 7 30	77 8 20	700	13 11 04	·35182	·35103	·34940	−19	−13	−17
54 G	536	Mahona ...	25 53 40	77 46 40	1100	6 11 03	·35389	·35301	·35155	−17	−11	−16
	604	Bargaon ...	25 40 10	77 3 10	1600	10 11 04	·35139	·35064	·34924	−18	−10	−16
	537	Sīprī ...	25 26 0	77 39 20	1520	8 11 03	·35234	·35152	·35034	−16	−8	−14
	603	Shāhābād ...	25 14 40	77 9 40	1100	7 11 04	·35319	·35253	·35135	−16	−8	−14
54 H	543	Dharnaoda ...	24 35 50	77 5 50	1300	22 11 03	·35481	·35404	·35314	−15	−5	−12
	542	Pachar ...	24 34 50	77 43 40	1600	20 11 03	·35663	·35597	·35518	−13	−4	−11
	618	Naiākila ...	24 3 40	77 15 30	1500	26 12 09	·35379	·35381	·35319	−13	−2	−10
54 I	586	Alīgarh ...	27 53 44	78 4 20	600	12 3 04	·34526	·34425	·34191	−21	−19	−24
	584	Ganj Dūndwāra ...	27 43 30	78 56 20	550	8 3 04	·34634	·34538	·34326	−20	−17	−22
	570	Agra Cantonment ...	27 10 40	78 0 20	550	29 1 04	·34754	·34655	·34454	−20	−16	−21
	571	Shikohābād ...	27 4 30	78 35 30	540	2 2 04	·34862	·34774	·34584	−18	−15	−20
54 J	538	Bhind ...	26 34 5	78 47 50	570	11 11 03	·34846	·34759	·34602	−17	−12	−17

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
54 J	535	Gwalior ...	26 12 53	78 11 0	700	4 11 03	·35128	·35040	·34883	−17	−12	−17
54 K	539	Datiā ...	25 38 40	78 27 30	860	14 4 10	·35306	·35318	·35199	−15	− 9	−13
	540	Basai ...	25 8 39	78 23 30	1200	15 11 03	·35347	·35275	·35179	−14	− 6	−12
54 L	541(*a*)	Lalitpur ...	24 41 10	78 25 50	1200	17 11 03	·35969	·35908	·35834	−12	− 4	−10
	LV	BINA ...	24 10 50	78 11 0	1350	16 2 20	·35628	·35681	·35629	−11	− 2	− 8
54 M	590	Anjhi ...	27 38 20	79 59 20	500	17 4 10	·34663	·34683	·34488	−16	−15	−21
	583	Farrukhābād ...	27 23 5	79 34 40	450	6 3 04	·34753	·34671	·34487	−17	−14	−20
54 N	572	Alchulda ...	26 41 50	79 24 50	450	4 2 04	·35077	·35003	·34846	−15	−12	−17
	574	Kālpī ..	26 7 0	79 45 50	400	9 2 04	·35409	·35345	·35221	−13	− 9	−14
54 O	575	Pūnch ...	25 49 0	79 2 50	500	11 2 04	·35366	·35298	·35179	−14	− 9	−13
	577	Mahobā ...	25 18 10	79 50 40	650	15 2 04	·35480	·35426	·35340	−11	− 6	−10
	576	Mau-Rānīpur ...	25 15 10	79 9 10	1000	14 2 04	·35560	·35501	·35404	−12	− 7	−11
54 P	645	Chhatarpur ...	24 55 50	79 35 10	1050	15 4 05	·35793	·35756	·35681	−10	− 5	− 9
	644	Khurgapur ...	24 48 50	79 8 50	1100	12 4 05	·35727	·35686	·35611	−11	− 5	− 9
	643	Shāhgarh ...	24 19 10	79 7 20	1300	9 4 05	·36130	·36093	·36046	−10	− 2	− 7
55 A	560	Shujālpur ...	23 23 0	76 43 40	1480	7 1 04	·35987	·35932	·35892	−11	0	− 8
	559	Tarāna Road ...	23 15 40	76 3 50	1620	5 1 04	·35802	·35742	·35697	−12	0	− 9
55 B	619	Thuria ...	22 46 10	76 41 20	1500	23 11 11	·36387	·36378	·36366	−10	+ 3	− 6
	620	Hāt Piplia ...	22 46 0	76 17 10	1700	7 12 11	·36343	·36334	·36322	−10	+ 3	− 6
	556	Barwāha ...	22 15 20	76 1 30	630	1 4 09	·36362	·36361	·36360	− 9	+ 4	− 5
	550	Piplani ...	22 7 10	76 47 30	900	9 12 03	·35888	·35853	·35868	− 7	+ 5	− 3
55 C	551	Khandwā ...	21 49 20	76 21 50	1000	11 12 03	·36667	·36632	·36658	− 7	+ 6	− 2
	797	Darni ...	21 32 40	76 53 10	1000	16 4 10	·36829	·36820	·36857	− 5	+ 7	− 1
	552	Burhānpur ...	21 20 10	76 11 40	850	14 12 03	·36696	·36671	·36702	− 5	+ 6	− 1
	798	Jiri ...	21 10 40	76 50 50	1000	5 4 10	·36839	·36830	·36877	− 4	+ 7	+ 1
55 D	781	Nāndūra ...	20 50 20	76 28 30	870	7 1 05	·37297	·37281	·37339	− 4	+ 8	+ 2
	1162	Deūlghāt ...	20 32 0	76 7 10	1300	18 11 07	·36470	·36466	·36529	− 4	+ 8	+ 3
	1163	Mehkar ...	20 9 10	76 35 10	1100	22 11 07	·36600	·36597	·36676	− 3	+ 9	+ 5
55 E	546	Bhīlsa ...	23 31 10	77 48 50	1360	20 1 10	·35609	·35609	·35579	−10	0	− 6
	547	Bhopāl ...	23 15 50	77 24 30	1650	1 12 03	·36041	·35990	·35966	−10	+ 1	− 6
55 F	548	Hoshangābād ...	22 45 10	77 43 0	1030	4 12 03	·36351	·36310	·36308	− 8	+ 3	− 4
	549	Pagdhāl ...	22 24 50	77 21 10	1000	7 12 03	·36276	·36241	·36256	− 7	+ 5	− 3
	931	Dhar ...	22 21 20	77 51 20	1300	3 3 06	·36654	·36637	·36657	− 6	+ 5	− 2
	930	Bori ...	22 8 10	77 25 10	1600	26 2 06	·36348	·36331	·36357	− 6	+ 6	− 2
55 G	794	Betūl ...	21 54 50	77 53 40	2180	28 2 10	·36646	·36639	·36675	− 5	+ 6	0
	795(*a*)	Palsia ...	21 45 20	77 31 0	1800	12 3 10	·35715	·35707	·35749	− 5	+ 7	0
	796	Rangubali ...	21 42 40	77 8 20	1600	20 4 10	·36600	·36592	·36623	− 5	+ 6	− 1
	800	Bumunwadda ...	21 19 20	77 44 20	1300	1 4 05	·36851	·36836	·36894	− 4	+ 8	+ 2
	799	Anjangaon ...	21 10 40	77 18 30	1300	2 4 10	·37049	·37039	·37097	− 4	+ 8	+ 2
55 H	LXIV	AMRAOTI ...	20 55 30	77 45 50	1120	18 3 20	·36481	·36411	·36480	− 3	+ 9	+ 3
	780	Yavlkhed ...	20 42 50	77 4 30	960	5 1 05	·36957	·36945	·37014	− 3	+ 9	+ 3
	753	Karanja ...	20 28 30	77 29 20	1400	27 1 10	·36072	·36061	·36146	− 2	+10	+ 5
	752	Bāsim ...	20 6 53	77 8 20	1800	12 1 10	·36481	·36471	·36556	− 2	+10	+ 5
	1164	Chikni ...	20 5 0	77 53 30	1000	12 1 13	·37056	·37012	·37108	− 1	+11	+ 6
55 I	568	Saugor ...	23 50 50	78 44 20	1680	28 3 10	·36101	·36102	·36066	− 9	− 1	− 6
	642	Gourjhanar ...	23 31 30	78 56 0	1400	4 4 05	·36307	·36277	·36263	− 8	+ 1	− 4
	641	Silvāni ...	23 18 20	78 26 20	1200	1 3 10	·36672	·36671	·36657	− 8	+ 1	− 4
55 J	562	Mohpāni ...	22 44 42	78 50 20	1250	11 1 04	·36525	·36495	·36509	− 6	+ 4	− 2
	561	Sohāgpur ...	22 41 30	78 11 20	1080	9 1 04	·36273	·36238	·36252	− 7	+ 4	− 2
	932	Jamundonga ...	22 23 0	78 31 30	1800	8 3 06	·36593	·36579	·36604	− 5	+ 5	− 1
	773	Chhindwāra ...	22 3 40	78 57 30	2300	19 12 04	·36641	·36625	·36666	− 4	+ 6	+ 1
55 K	793	Doonawa ...	21 52 0	78 29 30	2400	9 3 05	·36795	·36780	·36827	− 4	+ 7	+ 1
	801	Louee ...	21 23 0	78 12 10	1400	4 4 05	·36903	·36892	·36950	− 3	+ 8	+ 2
	802	Kātol ...	21 16 0	78 35 50	1700	31 12 11	·36889	·36862	·36931	− 3	+ 9	+ 3
55 L	778	Dhāmangaon ...	20 46 54	78 8 40	980	9 2 12	·36746	·36715	·36795	− 2	+10	+ 4
	776	Paunār ...	20 46 50	78 42 40	830	28 1 12	·36911	·36880	·36965	− 1	+10	+ 5
55 M	566	Salaia ...	23 51 10	79 58 20	1410	26 4 05	·36205	·36179	·36159	− 7	0	− 4
	567	Damoh ...	23 50 0	79 26 0	1200	23 1 04	·36015	·35975	·35955	− 8	0	− 4
	564	Mirganj ...	23 9 40	79 46 50	1300	16 1 04	·35802	·35777	·35779	− 5	+ 2	− 2
	XVII	JUBBULPORE ...	23 9 26	79 57 9	1320	11 3 20	·36480	·36473	·36480	− 5	+ 2	− 1
55 N	563	Narsinghpur ...	22 56 40	79 12 30	1200	14 1 04	·36360	·36335	·36343	− 5	+ 3	− 2
	791	Lakhnadon ...	22 36 10	79 36 30	2000	24 2 05	·36698	·36683	·36707	− 4	+ 4	0

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
55 N	933	Jangawani ...	22 23 30	79 9 20	3000	18 3 06	·36920	·36909	·36939	− 4	+ 5	0
	772	Seoni ...	22 4 10	79 32 50	2020	17 12 04	·36794	·36782	·36828	− 3	+ 6	+ 2
55 O	792	Deolapar ...	21 35 10	79 22 20	1190	2 3 05	·37008	·37000	·37063	− 2	+ 8	+ 3
	774	Koka ...	21 15 30	79 43 0	840	22 12 04	·37024	·37020	·37099	− 1	+ 9	+ 5
	775	Kamptee ...	21 12 30	79 12 40	940	10 1 12	·36845	·36818	·36897	− 1	+ 9	+ 5
55 P	803	Umrer ...	20 51 0	79 20 0	1000	4 3 12	·37015	·36983	·37073	0	+ 10	+ 6
	804	Dokai-Surandi ...	20 46 0	79 48 0	800	16 4 05	·37187	·37187	·37288	0	+ 11	+ 7
	1040	Chimur ...	20 29 0	79 22 10	1000	10 1 07	·37114	·37114	·37221	0	+ 12	+ 7
	777	Warorā ...	20 14 20	79 0 20	690	29 12 04	·37011	·37011	·37118	0	+ 12	+ 7
56 A	1311	Sarsooty ...	19 59 50	76 29 50	1900	31 12 09	·36556	·36547	·36626	− 2	+ 9	+ 5
	1310	Rahir ...	19 59 40	76 17 20	1640	29 12 09	·36469	·36460	·36539	− 2	+ 9	+ 5
	1312	Kowotah ...	19 49 50	76 50 10	1680	4 1 10	·36862	·36852	·36942	− 2	+ 10	+ 6
	374	Satona ...	19 29 30	76 21 30	1440	24 12 09	·37112	·37102	·37192	− 2	+ 10	+ 6
	XLVII	PARBHANI ...	19 15 20	76 46 50	1350	17 11 19	·36996	·36891	·36997	− 1	+ 11	+ 8
56 B	654	Mominābād ...	18 44 0	76 23 30	2000	28 11 04	·37198	·37198	·37309	0	+ 11	+ 9
	1326	Tadwale ...	18 22 40	76 3 10	2200	10 3 10	·36584	·36571	·36687	0	+ 11	+ 10
	653	Ter ...	18 19 40	76 9 10	2200	12 3 10	·37440	·37426	·37548	0	+ 12	+ 10
56 C	659	Dallium ...	17 51 50	76 28 40	2100	15 12 04	·37041	·37045	·37183	+ 1	+ 13	+ 12
	1307	Telmood ...	17 49 20	76 45 20	2000	29 11 09	·37733	·37720	·37869	+ 2	+ 14	+ 13
	XXXIV	HOTGI ...	17 33 40	76 0 20	1530	24 11 19	·37603	·37461	·37604	+ 1	+ 13	+ 13
	1306 (a)	Aland ...	17 32 50	76 34 40	1800	26 11 09	·38321	·38308	·38457	+ 2	+ 14	+ 13
	176	Ghāngāpur ...	17 20 20	76 56 0	1440	16 11 09	·37492	·37480	·37634	+ 2	+ 14	+ 14
	1305	Gulbarga ...	17 18 50	76 49 10	1490	22 11 09	·37579	·37566	·37731	+ 3	+ 15	+ 15
	177	Wādi Junction ...	17 3 0	77 0 0	1400	18 11 09	·37593	·37580	·37750	+ 3	+ 15	+ 16
56 D	662	Gebbasaligi ...	16 58 50	76 21 0	1600	28 12 04	·37559	·37567	·37726	+ 2	+ 14	+ 15
	663	Shorāpur ...	16 31 0	76 45 40	1800	1 1 05	·37791	·37807	·37988	+ 4	+ 16	+ 17
	664	Mudgal ...	16 1 10	76 27 10	1900	4 1 05	·37612	·37628	·37820	+ 4	+ 17	+ 18
56 E	751	Hingoli ...	19 43 30	77 9 0	1500	8 1 10	·36642	·36631	·36732	− 1	+ 11	+ 7
	750	Umarkhed ...	19 36 9	77 41 20	1500	28 4 05	·37324	·37324	·37436	0	+ 12	+ 8
	376	Nānder ...	19 9 30	77 18 10	1200	18 12 09	·37062	·37050	·37167	0	+ 12	+ 9
56 F	377	Dharmabad ...	18 53 10	77 51 30	1220	20 12 09	·37330	·37317	·37445	+ 1	+ 13	+ 10
	1309	Kandahar ...	18 51 40	77 11 30	1500	14 12 09	·37011	·36999	·37116	0	+ 12	+ 9
	655	Udgīr ...	18 23 30	77 7 0	2100	10 12 09	·37525	·37513	·37646	+ 1	+ 13	+ 11
	656	Aurād ...	18 15 0	77 24 30	2000	7 12 09	·37404	·37391	·37535	+ 2	+ 14	+ 12
	1308	Bhālki ...	18 2 10	77 11 40	2000	4 12 09	·37493	·37480	·37624	+ 2	+ 14	+ 12
56 G	657	Bīdar ...	17 55 0	77 31 0	2200	8 12 04	·37648	·37660	·37820	+ 3	+ 15	+ 14
	658	Rajasoor ...	17 48 30	77 2 30	2100	1 12 09	·37585	·37572	·37721	+ 2	+ 14	+ 13
	714	Tāndūr ...	17 15 10	77 34 40	1800	24 12 04	·37772	·37788	·37964	+ 4	+ 16	+ 16
56 H	178	Yādgīr ...	16 44 40	77 8 10	1200	1 1 03	·37572	·37596	·37777	+ 4	+ 16	+ 17
	732	Kothakotta ...	16 23 27	77 56 0	1200	22 2 05	·37730	·37753	·37967	+ 6	+ 19	+ 20
	179	Raichūr ...	16 12 0	77 20 30	1330	3 1 03	·37837	·37867	·38070	+ 5	+ 18	+ 19
56 I	747	Danura ...	19 46 50	78 45 10	690	2 1 13	·37265	·37213	·37331	+ 1	+ 13	+ 8
	748	Kupti ...	19 21 13	78 25 10	1200	14 12 11	·37243	·37205	·37328	+ 1	+ 13	+ 9
	749	Dhānura ...	19 19 10	78 8 30	1300	24 4 05	·37603	·37607	·37730	+ 1	+ 13	+ 9
56 J	741	Bālkonda ...	18 51 31	78 19 40	1160	27 3 05	·37473	·37481	·37620	+ 2	+ 14	+ 11
	742	Jagtial ...	18 47 30	78 54 40	1200	13 2 12	·37815	·37768	·37918	+ 3	+ 15	+ 12
	378	Upalwai ...	18 25 10	78 19 20	1720	21 11 03	·37427	·37442	·37597	+ 3	+ 15	+ 13
56 K	379	Masaipet ...	17 52 40	78 27 30	1710	24 11 03	·37541	·37561	·37738	+ 4	+ 17	+ 15
	716	Kistnapur ...	17 47 57	78 44 11	1700	30 12 04	·37911	·37931	·38113	+ 5	+ 17	+ 16
	XV	SECUNDERĀBĀD ...	17 27 44	78 29 37	1760	20 11 19	·38126	·37935	·38128	+ 5	+ 18	+ 17
	715	Gollagūdā ...	17 25 0	78 1 50	1700	25 12 04	·37583	·37599	·37781	+ 4	+ 17	+ 16
	734	Shumshabad ...	17 15 33	78 23 50	1600	3 4 12	·37622	·37563	·37761	+ 5	+ 18	+ 18
	735	Nārāyanpur ...	17 9 43	78 52 40	1400	30 3 12	·37721	·37659	·37868	+ 6	+ 19	+ 19
56 L	733	Rajumpett ...	16 51 39	78 9 40	1800	25 2 05	·37743	·37762	·37965	+ 5	+ 18	+ 19
	736	Devarkonda ...	16 41 11	78 55 10	1500	7 3 05	·37879	·37906	·38131	+ 7	+ 20	+ 21
56 M	LXII	CHANDA ...	19 57 50	79 17 40	770	15 3 20	·37485	·37360	·37483	+ 1	+ 13	+ 9
	1057	Ghot ...	19 49 0	79 59 20	800	23 3 07	·37393	·37398	·37532	+ 3	+ 14	+ 10
	745	Sirpur Tāndūr ...	19 28 30	79 35 0	600	12 4 05	·37384	·37395	·37540	+ 3	+ 15	+ 11
	744	Sokra ...	19 27 40	79 4 10	1500	8 4 05	·37341	·37348	·37482	+ 2	+ 14	+ 10
	1056	Ahiri ...	19 24 40	79 59 50	600	20 3 07	·37491	·37498	·37654	+ 4	+ 16	+ 12
	743	Tāndūr ...	19 9 0	79 26 40	800	14 1 12	·37502	·37456	·37606	+ 3	+ 15	+ 12
56 N	719	Asanada ...	18 45 32	79 44 30	600	9 1 05	·37621	·37641	·37813	+ 5	+ 17	+ 14
	718	Pedapali ...	18 36 30	79 22 30	1100	24 2 12	·37847	·37797	·37963	+ 4	+ 16	+ 14
	720	Kottapalle ...	18 22 2	79 47 10	700	12 1 05	·37643	·37663	·37851	+ 5	+ 18	+ 16
	717	Thaviogpully ...	18 16 41	79 6 30	700	20 3 12	·37270	·37215	·37392	+ 4	+ 17	+ 15

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			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
56 O	381	Warangal ...	17 58 40	79 36 50	600	29 11 03	·37535	·37566	·37759	+ 6	+ 18	+ 17
	380 (*a*)	Alir ...	17 38 30	79 2 50	500	24 3 12	·37791	·37733	·37926	+ 6	+ 18	+ 17
	740	Teepurtee ...	17 0 37	79 24 50	500	21 3 05	·37855	·37881	·38101	+ 7	+ 20	+ 20
56 P	739	Dachepalle ...	16 36 0	79 43 40	400	18 3 05	·37901	·37935	·38183	+ 9	+ 23	+ 22
	737	Yelesvaram Ferry ...	16 28 29	79 12 40	400	9 3 05	·37856	·37886	·38128	+ 8	+ 22	+ 22
	738	Komoravale ...	16 6 10	79 20 0	500	13 3 05	·38461	·38495	·38748	+ 9	+ 23	+ 23
57 A	934	Hospet ...	15 16 45	76 23 0	1570	12 2 06	·37979	·37993	·38201	+ 5	+ 18	+ 20
	355	Bellary ...	15 8 50	76 55 30	1480	5 1 08	·37699	·37705	·37935	+ 6	+ 20	+ 22
57 B	674	Nundybayur ...	14 54 10	76 3 20	2000	12 2 05	·37241	·37257	·37470	+ 4	+ 18	+ 21
	401	Hangal ...	14 44 10	76 41 50	1840	6 2 04	·37818	·37843	·38078	+ 5	+ 20	+ 23
	402	Challakere ...	14 19 0	76 39 0	1890	8 2 04	·37956	·37980	·38226	+ 5	+ 21	+ 24
	209	Sāsālu ...	14 12 40	76 6 40	2500	15 3 03	·37773	·37802	·38037	+ 5	+ 20	+ 23
57 C	403	Hiriyūr ...	13 56 30	76 36 40	1960	10 2 04	·37876	·37905	·38136	+ 6	+ 21	+ 25
	206	Tiptūr ...	13 15 10	76 28 30	2900	9 3 03	·37894	·37935	·38197	+ 7	+ 22	+ 26
57 D	449	Yedivur ...	12 58 40	76 51 20	2460	12 1 04	·37939	·37979	·38252	+ 8	+ 23	+ 27
	448	Dandigauhalli ...	12 58 20	76 16 50	3020	9 1 04	·37808	·37838	·38105	+ 6	+ 22	+ 27
	203	Seringapatam ...	12 25 30	76 42 40	2340	2 3 03	·37874	·37921	·38199	+ 8	+ 23	+ 28
	201	Hunsūr ...	12 18 20	76 16 50	2560	24 2 03	·37835	·37876	·38154	+ 7	+ 23	+ 28
	202	Nanjangūd ...	12 7 40	76 40 40	2200	28 2 03	·38100	·38147	·38430	+ 8	+ 23	+ 29
57 E	180	Adoni ...	15 37 0	77 16 30	1360	4 1 03	·37870	·37906	·38125	+ 6	+ 19	+ 21
	713	Kurnool Road ...	15 23 20	77 52 10	1500	22 12 04	·38009	·38037	·38284	+ 7	+ 22	+ 23
	xxxv	GUNTAKAL ...	15 10 48	77 22 57	1410	12 2 20	·38154	·37910	·38151	+ 7	+ 21	+ 23
57 F	354	Gārladinne ...	14 50 0	77 35 20	1200	19 3 03	·38111	·38151	·38403	+ 7	+ 22	+ 24
	400	Kalyandrug ...	14 32 50	77 6 40	1800	1 2 04	·37616	·37650	·37902	+ 7	+ 22	+ 24
	351	Dharmavaram ...	14 25 20	77 42 40	1200	18 3 03	·37940	·37986	·38254	+ 8	+ 23	+ 26
	399	Povugada ...	14 6 20	77 17 10	2100	29 1 04	·37950	·37989	·38257	+ 8	+ 23	+ 26
57 G	352	Malugur ...	13 54 0	77 32 50	1800	16 3 03	·37705	·37751	·38030	+ 8	+ 24	+ 27
	353	Thondebhavi ...	13 30 10	77 31 0	2400	17 3 03	·38221	·38273	·38557	+ 9	+ 24	+ 28
	205	Tumkūr ...	13 20 0	77 6 0	2680	7 3 03	·37752	·37799	·38072	+ 8	+ 23	+ 27
57 H	vii	BANGALORE ...	12 58 43	77 35 26	3060	10 12 19	·38563	·38270	·38565	+ 9	+ 25	+ 29
	204	Channapatna ...	12 39 40	77 12 0	2100	3 3 03	·38131	·38183	·38472	+ 9	+ 24	+ 29
	450	Singanallur ...	12 8 30	77 13 0	2100	22 1 04	·38214	·38258	·38558	+ 9	+ 25	+ 30
57 I	731	Kurnool City ...	15 49 50	78 2 20	970	19 2 05	·37851	·37878	·38114	+ 7	+ 21	+ 22
	712	Nandyāl ...	15 28 20	78 28 0	1000	13 1 10	·38078	·38054	·38312	+ 8	+ 23	+ 24
	711	Diguvametta ...	15 23 30	78 49 20	1500	17 12 04	·37999	·38035	·38304	+ 9	+ 24	+ 25
57 J	730	Chāgalamarri ...	14 56 41	78 35 20	600	13 2 05	·38188	·38223	·38503	+ 9	+ 25	+ 26
	182	Kondāpuram ...	14 46 20	78 11 40	720	10 1 03	·38181	·38235	·38509	+ 9	+ 24	+ 26
	183	Cuddapah ...	14 27 10	78 49 20	450	12 1 03	·38093	·38153	·38450	+ 10	+ 27	+ 27
	350	Kadiri ...	14 6 50	78 9 0	1900	12 3 03	·38090	·38142	·38427	+ 9	+ 25	+ 27
57 K	349	Tummanamgutta ...	13 42 50	78 21 30	2000	10 3 03	·38251	·38309	·38611	+ 10	+ 27	+ 28
	348	Kalikiri ...	13 38 40	78 47 40	2000	8 3 03	·38253	·38317	·38630	+ 11	+ 28	+ 29
	398	Madanapalle ...	13 34 40	78 30 30	2400	24 1 04	·38040	·38094	·38401	+ 11	+ 27	+ 29
	675	Tadgole ...	13 24 50	78 13 0	2800	21 2 05	·38071	·38110	·38417	+ 10	+ 27	+ 29
	397	Palmaner ...	13 12 40	78 44 50	2200	21 1 04	·38035	·38089	·38413	+ 11	+ 29	+ 30
57 L	190	Bowringpet ...	12 58 50	78 11 0	2660	25 1 03	·38028	·38087	·38399	+ 10	+ 27	+ 30
	1335	Mysore Mines on Surface	12 55 30	78 15 40	2950	2 3 11	·38178	·38117	·38435	+ 11	+ 28	+ 30
	,,	,, ,, Underground	12 55 30	78 15 40	,,	3 3 11	·38213	·38152	·38470	+ 11	+ 28	+ 30
	189	Jalārpet ...	12 34 0	78 34 10	1320	24 1 03	·37922	·37993	·38322	+ 12	+ 29	+ 31
	191	Morappūr ...	12 7 30	78 21 40	1310	29 1 03	·38374	·38439	·38773	+ 11	+ 29	+ 32
57 M	709	Gundlakamma ...	15 59 10	79 38 20	400	14 12 04	·38135	·38176	·38445	+ 10	+ 24	+ 25
	726	Podili ...	15 37 5	79 36 20	300	2 2 05	·38113	·38152	·38427	+ 10	+ 25	+ 25
	lxi	CUMBUM ...	15 35 50	79 6 40	600	16 2 20	·38353	·38081	·38350	+ 9	+ 24	+ 25
	727	Pāmūru ...	15 5 20	79 24 40	500	6 2 05	·38120	·38163	·38449	+ 11	+ 26	+ 26
57 N	387	Bitragunta ...	14 48 40	79 57 20	30	5 1 09	·38121	·38121	·38429	+ 12	+ 28	+ 28
	729	Badvel ...	14 43 57	79 3 50	600	11 2 05	·38131	·38170	·38461	+ 10	+ 26	+ 27
	728	Nandabaram ...	14 40 33	79 28 50	100	8 2 05	·38176	·38219	·38522	+ 11	+ 28	+ 27
	346	Gūdūr ...	14 8 40	79 51 10	50	4 3 03	·38282	·38358	·38683	+ 13	+ 30	+ 29
	184	Reddipalle ...	14 5 30	79 14 0	560	14 1 03	·38086	·38158	·38477	+ 12	+ 29	+ 29
57 O	185	Rēnigunta ...	13 38 20	79 30 50	370	2 3 03	·38029	·38105	·38435	+ 13	+ 30	+ 30
	347	Pākala ...	13 27 0	79 7 20	1200	6 3 03	·38147	·38217	·38547	+ 12	+ 30	+ 30
	xxxvi	ARKONAM ...	13 4 30	79 40 20	300	8 2 20	·38791	·38448	·38788	+ 13	+ 30	+ 32
57 P	188	Katpadi ...	12 58 40	79 7 40	700	25 2 03	·38338	·38408	·38743	+ 12	+ 30	+ 31
	345	Chingleput ...	12 41 20	79 58 30	130	27 2 03	·38208	·38290	·38640	+ 14	+ 30	+ 34
	344	Polūr ...	12 30 50	79 7 50	700	23 2 03	·38019	·38095	·38440	+ 13	+ 30	+ 33
	389	Acharapakkam ...	12 34 10	79 49 10	135	15 12 03	·37803	·37874	·38224	+ 14	+ 30	+ 34
	343	Tandarai ...	12 6 40	79 9 0	500	21 2 03	·38128	·38204	·38554	+ 13	+ 30	+ 34

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
58 A	453	Gundalpet ...	11 48 20	76 41 20	2600	5 2 04	·38078	·38117	·38406	+ 8	+ 24	+ 29
	454	Sultan's Battery ...	11 39 40	76 15 30	2900	8 2 04	·38087	·38126	·38409	+ 8	+ 23	+ 29
	455	Ootacamund ...	11 24 30	76 42 50	8000	14 2 04	·37992	·38036	·38330	+ 9	+ 24	+ 30
	195	Coonoor ...	11 20 40	76 47 50	6000	6 2 03	·37899	·37952	·38246	+ 9	+ 24	+ 30
	456	Nilambūr ...	11 16 20	76 13 20	100	18 2 04	·37756	·37795	·38078	+ 8	+ 23	+ 29
58 B	197	Pattāmbi ...	10 48 10	76 10 40	70	11 2 03	·37450	·37497	·37785	+ 8	+ 23	+ 30
	196	Olavakkōt ...	10 48 10	76 38 20	260	9 2 03	·37702	·37755	·38048	+ 9	+ 23	+ 31
	457	Anamalai ...	10 34 50	76 56 0	1300	24 2 04	·37983	·38022	·38326	+ 8	+ 24	+ 32
	475	Irinjālakuda ...	10 20 20	76 13 0	50	5 5 04	·37803	·37840	·38133	+ 8	+ 23	+ 31
	474	Kodhamangalam ...	10 3 40	76 37 40	100	2 5 04	·37644	·37686	·37984	+ 9	+ 23	+ 32
58 C	473	Cochin ...	9 57 50	76 14 0	10	28 4 04	·38013	·38050	·38337	+ 8	+ 22	+ 31
	464	Kanjirapalli ...	9 33 0	76 46 50	300	26 3 04	·37749	·37797	·38100	+ 10	+ 23	+ 33
	465	Alleppey ...	9 29 50	76 19 10	0	29 3 04	·37415	·37458	·37756	+ 9	+ 23	+ 32
	467	Punalūr ...	9 1 20	76 55 30	200	5 4 04	·37938	·37985	·38293	+ 10	+ 23	+ 34
58 D	466	Quilon ...	8 53 30	76 36 0	0	1 4 04	·37743	·37791	·38094	+ 10	+ 23	+ 33
	472	Trivandrum ...	8 28 50	76 55 30	0	23 4 04	·37921	·37968	·38276	+ 10	+ 23	+ 34
58 E	451	Kāveripuram ...	11 54 20	77 45 30	1000	27 1 04	·37859	·37908	·38225	+ 10	+ 27	+ 31
	452	Satyamangalam ...	11 30 0	77 14 20	800	1 2 04	·38278	·38327	·38632	+ 10	+ 25	+ 31
	193	Erode ...	11 19 40	77 43 50	540	2 2 03	·38074	·38139	·38461	+ 11	+ 27	+ 32
	194	Sōmanūr ...	11 5 10	77 11 0	1120	4 2 03	·37735	·37794	·38104	+ 10	+ 25	+ 32
58 F	458	Dhārāpuram ...	10 43 30	77 31 20	850	28 2 04	·38284	·38337	·38652	+ 11	+ 25	+ 33
		KODAIKANAL Obsy.	10 13 50	77 27 46	7550	...	...	·37447	·37753	+ 11	+ 25	+ 32
	330	Ammayanayakkanur ...	10 10 30	77 54 20	780	18 1 03	·38142	·38207	·38539	+ 11	+ 27	+ 34
	462	Nyamakod Estate ...	10 8 10	77 3 10	8500	16 3 04	·37994	·38042	·38351	+ 10	+ 24	+ 33
	459	Periyakulam ...	10 7 40	77 33 20	950	4 3 04	·38265	·38318	·38638	+ 11	+ 25	+ 34
	460	Top Station ...	10 6 40	77 13 20	8000	11 3 04	·37898	·37946	·38255	+ 10	+ 24	+ 33
	461	Munnar ...	10 4 10	77 3 20	7500	13 3 04	·37942	·37990	·38299	+ 10	+ 24	+ 33
58 G	463	Kuruvanath ...	9 38 50	77 12 30	4000	22 3 04	·37998	·38051	·38365	+ 11	+ 24	+ 34
	469	Virudupatti ...	9 35 50	77 57 40	330	11 4 04	·38335	·38392	·38723	+ 12	+ 26	+ 35
	329	Koilpati ...	9 10 30	77 51 50	290					+ 12	+ 25	+ 35
58 H	468	Tenkāsi ...	8 58 0	77 18 30	500	8 4 04	·38009	·38061	·38375	+ 11	+ 24	+ 34
	XLIV	**TINNEVELLY** ...	8 44 0	77 43 30	130	12 1 20	·38212	·37886	·38211	+ 11	+ 25	+ 35
	471	Nāgercoil ...	8 11 20	77 26 0	200	20 4 04	·37848	·37900	·38219	+ 11	+ 24	+ 35
58 I	192	Salem ...	11 40 0	78 6 50	920	31 1 03	·38149	·38214	·38542	+ 11	+ 28	+ 32
	391	Atūr ...	11 35 40	78 36 50	500	23 12 03	·38406	·38466	·38816	+ 12	+ 30	+ 34
	392	Perambalūr ...	11 14 10	78 51 50	500	26 12 03	·38324	·38389	·38744	+ 13	+ 30	+ 35
58 J	336	Puliyur ...	10 56 0	78 10 10	370	1 2 03	·37753	·37824	·38162	+ 12	+ 28	+ 34
	335	Trichinopoly ...	10 47 30	78 40 40	270	27 12 07	·38123	·38135	·38490	+ 12	+ 30	+ 35
	331	Manapārai ...	10 36 40	78 25 30	510	20 1 03	·38151	·38222	·38577	+ 12	+ 30	+ 35
	393	Pudukottai ...	10 22 50	78 48 50	400	30 12 03	·37929	·37994	·38354	+ 13	+ 30	+ 36
	396	Nattam ...	10 13 40	78 14 0	700	14 1 04	·37868	·37928	·38271	+ 12	+ 28	+ 35
	395	Tiruppattūr ...	10 7 10	78 36 0	300	10 1 04	·38072	·38137	·38497	+ 13	+ 30	+ 36
58 K	334	Tiruppuvanam ...	9 49 20	78 15 40	400	27 1 03	·37965	·38036	·38379	+ 12	+ 28	+ 35
	333	Sattirakkudi ...	9 24 0	78 42 10	60	24 1 03	·38048	·38125	·38490	+ 13	+ 30	+ 37
58 L	327	Tuticorin ...	8 48 10	78 9 0	10	16 1 09	·38072	·38071	·38407	+ 12	+ 26	+ 36
	470	Manapadu ...	8 22 20	78 4 0	0	16 4 04	·37990	·38047	·38377	+ 12	+ 25	+ 36
58 M	341	Villupuram ...	11 56 40	79 29 50	140	17 2 03	·37716	·37792	·38147	+ 13	+ 30	+ 35
	342	Pondicherry ...	11 56 0	79 49 50	50	19 2 03	·38360	·38442	·38797	+ 14	+ 30	+ 35
	340	Alapākam ...	11 37 10	79 43 10	20	15 2 03	·38417	·38499	·38859	+ 14	+ 30	+ 36
	390	Eranji ...	11 35 50	79 10 20	250	20 12 03	·37741	·37806	·38161	+ 13	+ 30	+ 35
	338	Māyavaram ...	11 5 50	79 38 30	50	6 2 03	·38330	·38413	·38773	+ 14	+ 30	+ 36
58 N	XLVI	**TANJORE** ...	10 46 40	79 8 20	190	1 2 20	·38539	·38176	·38536	+ 13	+ 30	+ 36
	339	Tirutturaippūndi ...	10 32 20	79 38 10	20	13 2 03	·38107	·38189	·38554	+ 14	+ 30	+ 37
	394	Setabava Chattram ...	10 14 50	79 16 50	0	5 1 04	·38043	·38113	·38478	+ 14	+ 30	+ 37
58 O	XLV	MANDAPAM ...	9 16 50	79 8 30	0	15 1 20	·38532	·38160	·38530	+ 13	+ 30	+ 38
58 P	1377	Mannar ...	8 59 10	79 54 30	10	3 3 13	·38378	·38253	·38633	+ 14	+ 30	+ 40
	1378	Marichchukaddi ...	8 34 50	79 55 0	20	4 3 13	·38254	·38129	·38509	+ 14	+ 30	+ 40
	1379	Puttalam ...	8 1 38	79 49 0	10	5 3 13	·38304	·38178	·38558	+ 14	+ 30	+ 40
59 M	1380	Chilaw ...	7 34 20	79 46 50	10	7 3 13	·38159	·38038	·38417	+ 14	+ 29	+ 41
	1381	Negombo ...	7 12 30	79 49 20	10	10 3 13	·38243	·38126	·38499	+ 14	+ 28	+ 41
59 N	1398	Colombo ...	6 54 17	79 52 15	10	1 2 13	·38006	·37896	·38263	+ 14	+ 27	+ 41
62 C	1277	Nochani ...	29 54 20	80 9 40	3000	27 12 09	·33658	·33680	·33403	− 22	− 22	− 29
	1276	Askot ...	29 45 41	80 19 30	3000	22 12 09	·33760	·33780	·33514	− 21	− 21	− 28

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			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
62 C	1275	Pithoragarh ...	29 35 0	80 12 30	5400	18 12 09	·33845	·33865	·33599	−21	−21	−28
	1274	Lohaghat ...	29 24 20	80 5 30	5500	13 12 09	·33812	·33832	·33571	−21	−21	−27
62 D	596	Shāhgarh ...	28 33 30	80 3 10	650	10 4 04	·34368	·34278	·34045	−19	−18	−25
	594	Chandan Choki ...	28 32 22	80 46 40	600	5 4 04	·34485	·34405	·34189	−17	−16	−24
	595	Khutār ...	28 12 0	80 15 40	600	7 4 04	·34527	·34447	·34236	−17	−16	−23
62 H	LII	KATARNIAN GHĀT	28 19 50	81 7 50	600	29 2 20	·34311	·34520	·34315	−15	−15	−23
63 A	593	Lakhimpur ...	27 56 18	80 46 20	450	2 4 04	·34663	·34592	·34403	−15	−14	−21
	592	Kamālpur ...	27 22 30	80 49 40	450	30 3 04	·34912	·34845	·34678	−14	−12	−19
	591	Sanoda ...	27 6 58	80 25 10	500	25 3 04	·34964	·34897	·34735	−14	−12	−18
63 B	582	Araul ...	26 55 0	80 1 40	450	3 3 04	·35091	·35023	·34866	−14	−12	−17
	476	Lucknow ...	26 50 0	80 55 20	400	27 3 04	·35145	·35088	·34948	−12	−10	−16
	LVII	CAWNPORE ...	26 27 0	80 21 0	400	26 2 20	·35180	·35317	·35182	−13	−10	−15
	581	Mālwā ...	26 0 50	80 40 0	380	29 2 04	·35379	·35326	·35218	−11	−8	−12
63 C	578	Atarra ...	25 17 20	80 34 10	430	18 2 04	·35678	·35634	·35558	−9	−6	−8
63 D	646	Ajaigarh ...	24 54 10	80 15 30	650	18 4 05	·35942	·35909	·35850	−9	−4	−7
	579	Sutnā ...	24 34 20	80 50 0	1000	26 4 08	·35984	·35980	·35943	−6	−2	−5
	647	Amānganj ...	24 25 40	80 2 30	1000	23 4 05	·36256	·36227	·36179	−8	−3	−6
	580	Amdara ...	24 6 10	80 34 40	1210	26 2 04	·36187	·36158	·36117	−6	−1	−7
63 E	517	Nānpāra ...	27 51 40	81 31 10	500	28 3 04	·34867	·34805	·34627	−13	−13	−20
	515	Gondā ...	27 8 30	81 58 20	350	23 3 04	·35026	·34978	·34838	−10	−10	−16
63 F	514	Daryābād ...	26 51 30	81 33 0	350	21 3 04	·35185	·35142	·35007	−9	−10	−15
	477	Rāe-Bareli ...	26 14 0	81 14 40	400	5 11 03	·35582	·35530	·35422	−10	−8	−12
	478	Amethi ...	26 9 20	81 48 40	400	7 11 03	·35421	·35380	·35283	−8	−7	−11
63 G	482	Kunwār ...	25 42 0	81 13 10	340	16 11 03	·35326	·35280	·35104	−9	−6	−10
	481	Allahābād ...	25 27 30	81 49 20	300	1 12 10	·35848	·35858	·35788	−7	−5	−8
	XLIX	MĀNIKPUR ...	25 3 10	81 5 20	800	8 3 20	·35819	·35874	·35820	−7	−4	−0
63 H	892	Sohagi ...	24 59 20	81 42 0	630	9 2 06	·35999	·35982	·35939	−6	−3	−5
	891	Mauganj ...	24 40 50	81 50 40	1200	6 2 06	·35965	·35953	·35921	−4	−2	−4
	893	Rewah ...	24 33 0	81 17 50	1040	13 2 06	·36099	·36085	·36053	−5	−2	−4
	894	Rāmnagar ...	24 11 0	81 8 50	1400	20 2 06	·36162	·36148	·36127	−5	−1	−3
	895	Majholi ...	24 6 47	81 37 0	1200	23 2 06	·36519	·36510	·36500	−3	0	−2
63 I	516	Tulsipur ...	27 31 30	82 24 40	350	26 3 04	·34946	·34898	·34748	−10	−10	−18
63 J	519	Basti ...	26 49 10	82 46 30	290	1 4 04	·35338	·35300	·35188	−8	−7	−14
	X	FYZĀBĀD ...	26 48 5	82 8 5	330	3 3 20	·35170	·35290	·35172	−9	−8	−14
	513	Mālipur ...	26 16 10	82 38 50	300	19 3 04	·35569	·35536	·35445	−7	−6	−11
63 K	479	Suriāwān ...	25 28 0	82 25 50	300	10 11 03	·35883	·35857	·35804	−5	−3	−7
	480	Chunār ...	25 6 10	82 52 30	300	12 11 03	·36010	·35995	·35964	−3	−1	−5
	890	Lālganj ...	25 1 20	82 22 10	500	2 2 06	·36047	·36035	·35998	−4	−2	−5
63 L	889	Shāhganj ...	24 42 30	82 56 40	1400	24 1 06	·36126	·36120	·36105	−2	0	−3
	896	Jiawan ...	24 20 20	82 16 20	1200	28 2 06	·36862	·36853	·36843	−3	0	−2
	897	Saipur ...	24 2 30	82 41 30	900	4 3 06	·36535	·36532	·36539	−1	+2	−1
63 M	521	Uskā Bāzār ...	27 11 30	83 6 20	280	5 4 04	·35119	·35081	·34953	−8	−8	−16
63 N	520	Gorakhpur ...	26 45 0	83 23 20	250	2 4 04	·35456	·35427	·35326	−6	−6	−13
	522	Bhatni ...	26 23 0	83 55 40	250	6 5 08	·35579	·35576	·35497	−4	−4	−11
	524	Azamgarh ...	26 1 50	83 11 10	250	11 4 04	·35670	·35646	·35572	−5	−4	−10
63 O	523	Mau ...	25 56 20	83 34 20	240	8 4 04	·35522	·35503	·35440	−4	−3	−9
	996	Zahūrābād ...	25 44 40	83 43 30	230	2 11 06	·35703	·35697	·35645	−3	−2	−8
	995	Ghāzipur ...	25 33 50	83 33 20	220	31 10 06	·35950	·35943	·35891	−3	−2	−8
	512	Buxar ...	25 33 30	83 57 40	200	21 11 10	·36272	·36274	·36233	−2	−1	−7
	525	Aunrihar ...	25 32 10	83 9 50	240	13 4 04	·35799	·35780	·35733	−4	−2	−7
	959	Gahmar ...	25 29 0	83 48 10	200	31 10 06	·36021	·36017	·35981	−2	−1	−6
	484	Karmnasa ...	25 14 30	83 25 20	240	21 11 03	·35940	·35930	·35899	−2	−1	−5
63 P	888	Manchee ...	24 39 40	83 25 50	1000	21 1 06	·36191	·36188	·36179	−1	+1	−3
	485	Japla ...	24 32 30	84 0 0	600	24 11 03	·36486	·36491	·36499	+1	+3	−2
	887	Doodhee ...	24 12 40	83 14 30	1000	14 1 06	·36483	·36483	·36496	0	+3	−1
	886	Meeral ...	24 11 20	83 42 30	1000	11 1 06	·36701	·36704	·36723	+1	+4	−1
64 A	565	Sleemanābād ...	23 36 30	80 16 20	1400	18 1 04	·36695	·36670	·36666	−5	+1	−2
	763	Umariā ...	23 31 10	80 49 10	1520	26 11 04	·36451	·36435	·36442	−4	+2	−1
	782	Churi ...	23 12 40	80 30 0	1900	14 1 05	·36366	·36350	·36363	−4	+3	−1
	783 (*a*)	Kasai Sonda ...	23 4 50	80 53 50	2300	19 1 05	·36502	·36494	·36512	−2	+3	0
64 B	790	Kakaria ...	22 48 10	80 15 10	1400	18 2 05	·36726	·36714	·36738	−3	+4	0

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			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
64 B	789	Thonda ...	22 27 50	80 38 30	1600	13 2 05	·36738	·36734	·36780	− 1	+ 6	+ 2
	771	Nainpur ...	22 25 36	80 5 40	1450	15 12 04	·36837	·36829	·36864	− 2	+ 5	+ 1
64 C	770	Bālāghāt ...	21 48 40	80 12 10	1050	13 12 04	·36984	·36980	·37048	− 1	+ 8	+ 4
	769	Sālekasa ...	21 17 30	80 30 40	1050	1 4 12	·37832	·37799	·37889	+ 1	+10	+ 6
64 D	805	Palasgarh ...	20 39 0	80 17 10	1200	20 4 05	·37149	·37156	·37268	+ 2	+12	+ 8
	806	Kosemi ...	20 23 40	80 34 10	1200	23 4 05	·37285	·37296	·37419	+ 3	+13	+ 9
	807	Damkassa ...	20 20 30	80 56 10	1400	26 4 05	·37380	·37395	·37529	+ 4	+14	+10
	1041	Garhchirolī ...	20 11 0	80 0 40	800	15 1 07	·37379	·37383	·37506	+ 2	+13	+ 9
64 E	899	Bharatpur ...	23 44 5	81 46 10	1500	13 3 06	·36388	·36382	·36389	− 2	+ 2	− 1
	762	Sahdol ...	23 17 0	81 21 50	1520	24 11 04	·36726	·36718	·36736	− 2	+ 3	0
64 F	784	Dindori ...	22 57 0	81 4 10	2200	22 1 05	·36689	·36681	·36710	− 2	+ 4	+ 1
	761	Khairi ...	22 55 20	81 52 50	1800	24 4 08	·36670	·36670	·36710	0	+ 5	+ 2
	785	Mādhopur ...	22 45 40	81 25 20	2600	25 1 05	·36383	·36383	·36423	0	+ 5	+ 2
	788	Rajadhar ...	22 14 0	81 2 40	2200	10 2 05	·36801	·36801	·36863	0	+ 7	+ 4
	787	Kamardhā ...	22 0 20	81 13 40	1100	7 2 05	·36845	·36849	·36922	+ 1	+ 8	+ 5
64 G	764	Bhātāpāra ...	21 44 0	81 56 30	890	29 11 04	·36972	·36984	·37079	+ 3	+10	+ 7
	786	Bemetara ...	21 43 0	81 31 40	900	3 2 05	·37048	·37056	·37146	− 2	+10	+ 6
	LXIII	RAIPUR ...	21 15 50	81 38 20	970	10 3 20	·37244	·37130	·37242	+ 4	+12	+ 8
	768	Rāj-Nāndgaon ...	21 6 10	81 2 20	1010	8 12 04	·37251	·37263	·37364	+ 3	+11	+ 7
64 H	766	Rājim ...	20 58 30	81 52 10	800	4 12 04	·37234	·37254	·37377	+ 5	+13	+ 9
	767	Dhamtari ...	20 42 40	81 32 40	1050	10 12 09	·37284	·37271	·37400	+ 5	+14	+ 9
	942	Sihoa ...	20 18 40	81 54 40	1420	12 12 09	·37332	·37317	·37473	+ 7	+16	+12
	808	Kānker ...	20 16 10	81 29 50	1300	28 4 05	·37515	·37537	·37682	+ 6	+15	+11
64 I	898	Goini ...	23 48 0	82 19 20	1500	9 3 06	·36744	·36741	·36759	− 1	+ 3	0
	900	Ninguani[1] ...	23 18 50	82 0 30	1850	17 3 06	·36527	·36527	·36556	0	+ 4	+ 1
	901	Baikunthpur ...	23 16 20	82 33 0	1700	22 3 06	·36699	·36702	·36742	+ 1	+ 5	+ 2
64 J	902	Matin ...	22 43 50	82 25 0	1500	27 3 06	·36866	·36872	·36934	+ 2	+ 7	+ 4
	760	Belghana ...	22 25 50	82 2 20	1090	19 11 04	·36904	·36912	·36980	+ 2	+ 8	+ 4
	903	Korba ...	22 20 30	82 42 30	900	31 3 06	·37021	·37032	·37111	+ 4	+ 9	+ 5
	759	Akaltara ...	22 8 10	82 25 40	920	17 11 04	·37063	·37079	·37169	+ 4	+10	+ 6
64 K	1038	Pithora ...	21 15 20	82 31 10	1000	28 12 06	·37115	·37127	·37256	+ 6	+14	+ 9
	1039	Tumgaon ...	21 11 40	82 7 20	900	31 12 06	·37227	·37237	·37360	+ 5	+13	+ 9
64 L	1036	Nawapara ...	20 48 40	82 31 50	900	19 12 06	·37264	·37278	·37423	+ 7	+15	+11
	1035	Khariar ...	20 17 44	82 46 0	1100	14 12 06	·37587	·37605	·37778	+ 9	+18	+13
64 M	907	Champa ...	23 13 0	83 45 10	2900	17 4 06	·36733	·36744	·36807	+ 4	+ 8	+ 3
	909	Bisrāmpur ...	23 6 30	83 12 10	1950	24 4 06	·36616	·36629	·36686	+ 5	+ 7	+ 3
64 N	908	Kalnai ...	22 46 30	83 30 20	1900	21 4 06	·37011	·37024	·37103	+ 5	+ 9	+ 5
	904	Dharmjaygarh ...	22 28 10	83 13 20	900	3 4 06	·36947	·36961	·37051	+ 5	+10	+ 6
	905	Sikirma ...	22 26 40	83 56 20	1000	9 4 06	·36804	·36820	·36921	+ 6	+11	+ 7
64 O	758	Kharsia ...	21 59 40	83 6 20	840	15 11 04	·37029	·37050	·37151	+ 5	+11	+ 7
	757	Kanika ...	21 52 30	83 44 20	880	12 11 04	·37221	·37250	·37373	+ 7	+13	+ 9
	XI	SAMBALPUR ...	21 27 52	83 58 35	500	6 3 20	·37469	·37316	·37467	+ 9	+16	+11
	1037	Saraipali ...	21 18 20	83 0 30	900	25 12 06	·37265	·37279	·37413	+ 7	+14	+10
	1033	Chakerkend ...	21 18 10	83 30 30	600	6 12 06	·37230	·37247	·37392	+ 8	+15	+11
64 P	938	Sonpur ...	20 50 40	83 54 30	370	23 11 05	·37616	·37647	·37820	+10	+18	+13
	1034	Patnā ...	20 42 20	83 8 20	800	10 12 06	·37606	·37625	·37787	+ 9	+17	+12
65 A	1042	Jaroundee ...	19 59 40	80 26 20	1000	19 1 07	·37399	·37407	·37547	+ 4	+15	+10
	1044	Koilibeda ...	19 57 40	80 59 0	1200	26 1 07	·37477	·37487	·37638	+ 5	+16	+11
	1043	Parlakot ...	19 47 0	80 41 10	1000	22 1 07	·37516	·37526	·37682	+ 5	+16	+12
	1055	Kumargura ...	19 26 30	80 32 30	700	17 3 07	·37702	·37711	·37872	+ 5	+16	+13
65 B	1054	Matimurka ...	18 59 30	80 16 50	360	11 3 07	·37489	·37498	·37670	+ 5	+17	+14
	1050	Vijapur ...	18 47 20	80 49 0	1000	22 2 07	·37900	·37913	·38107	+ 7	+19	+16
	1053	Madder ...	18 46 20	80 33 10	410	6 3 07	·37368	·37379	·37562	+ 6	+18	+15
	721	Lankalagada ...	18 40 58	80 7 10	400	15 1 05	·37632	·37656	·37839	+ 6	+18	+15
	1051	Pothikal ...	18 32 30	80 54 0	400	25 2 07	·37551	·37566	·37765	+ 8	+19	+17
	722	Nagaram ...	18 20 50	80 25 40	350	17 1 05	·37788	·37816	·38015	+ 7	+19	+17
	723	Biaram ...	18 3 13	80 44 20	300	22 1 05	·37925	·37960	·38181	+ 9	+21	+19
65 C	724	Burgampol ...	17 38 25	80 52 10	400	25 1 05	·38021	·38060	·38297	+10	+22	+21
	382	Mānukota ...	17 36 0	80 0 10	500	4 12 03	·38044	·38085	·38300	+ 8	+20	+19
	383	Bonakālu ...	17 2 0	80 15 50	300	5 12 03	·37749	·37795	·38037	+ 9	+22	+22
65 D	XLVIII	BEZWĀDA ...	16 31 0	80 36 50	70	19 2 20	·38358	·38085	·38355	+11	+25	+24
	708	Phirangipuram ...	16 17 50	80 15 40	100	12 12 04	·38402	·38447	·38717	+11	+25	+24

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			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
65 E	1045	Narainpur ...	19 43 10	81 14 50	1800	29 1 07	·37526	·37538	·37705	+ 6	+ 17	+ 13
	1046	Kondagaon ...	19 35 10	81 40 10	1800	2 2 07	·37676	·37691	·37869	+ 8	+ 18	+ 14
	1048	Barsur ...	19 8 10	81 23 20	1000	16 2 07	·37643	·37658	·37847	+ 8	+ 19	+ 15
	1049	Bhairamgarh ...	19 0 30	81 2 40	1000	19 2 07	·37752	·37765	·37948	+ 7	+ 18	+ 15
65 F	1047	Kinepal ...	18 58 30	81 36 40	1800	13 2 07	·37687	·37704	·37898	+ 9	+ 19	+ 16
	955	Thakawada ...	18 44 30	81 48 30	1000	7 4 06	·37682	·37709	·37925	+ 10	+ 21	+ 18
	957	Malkanagiri ...	18 21 50	81 53 30	700	15 4 06	·38020	·38050	·38282	+ 11	+ 22	+ 20
	1052	Chintulnar ...	18 20 50	81 11 10	700	1 3 07	·37923	·37940	·38156	+ 9	+ 21	+ 18
65 G	958	Pusigudiam ...	17 53 0	81 31 10	300	22 4 06	·38031	·38061	·38304	+ 11	+ 23	+ 21
	725	Dummapett ...	17 17 17	81 0 10	200	27 1 05	·38082	·38125	·38373	+ 11	+ 23	+ 22
	705	Rājahmundry ...	17 0 35	81 46 20	50	3 12 04	·38215	·38268	·38544	+ 13	+ 26	+ 24
65 H	706	Bhīmadōl ...	16 48 40	81 15 30	40	5 12 04	·38164	·38213	·38483	+ 12	+ 25	+ 24
	707	Masulipatam ...	16 11 30	81 7 40	0	8 12 04	·38026	·38079	·38371	+ 13	+ 27	+ 26
65 I	943	Raigarh ...	19 53 20	82 4 20	2150	16 12 09	·37623	·37606	·37784	+ 8	+ 18	+ 14
	952	Junāgarh ...	19 51 53	82 56 10	700	25 3 06	·37655	·37683	·37872	+ 10	+ 19	+ 15
	953	Jamgaon or Jaipatna ...	19 28 10	82 48 20	1200	27 3 06	·37722	·37752	·37957	+ 11	+ 20	+ 17
	944	Dabgaon ...	19 27 0	82 24 40	1940	18 12 09	·37673	·37654	·37854	+ 10	+ 20	+ 16
	954	Jagdalpur ...	19 5 40	82 1 40	1830	2 4 06	·37642	·37667	·37872	+ 9	+ 20	+ 17
65 J	945	Jeypore ...	18 51 34	82 34 40	1940	21 12 09	·37361	·37340	·37567	+ 11	+ 22	+ 19
	956	Govindpili ...	18 34 50	82 17 0	900	12 4 06	·37957	·37987	·38214	+ 11	+ 22	+ 19
	946	Padwa ...	18 22 20	82 40 40	3000	4 3 06	·37986	·38023	·38272	+ 13	+ 24	+ 21
65 K	1058	Kodasanta ...	17 46 3	82 33 40	500	6 4 07	·38161	·38185	·38445	+ 14	+ 25	+ 22
	703	Tuni ...	17 21 30	82 32 10	60	29 11 04	·38163	·38220	·38496	+ 14	+ 26	+ 24
65 L	704	Cocanāda (Port) ...	16 56 20	82 14 10	10	1 12 04	·38035	·38092	·38379	+ 14	+ 27	+ 25
65 M	951	Dadpur ...	19 58 40	83 14 10	850	21 3 06	·37605	·37633	·37828	+ 10	+ 20	+ 15
	950	Tikirapara ...	19 37 40	83 29 20	2500	19 3 06	·37731	·37764	·37975	+ 12	+ 21	+ 17
	1061	Sirgudi ...	19 25 20	83 49 0	700	19 4 07	·37855	·37877	·38105	+ 13	+ 23	+ 18
	949	Rāyagada ...	19 9 50	83 24 40	200	15 3 06	·37814	·37850	·38083	+ 13	+ 23	+ 19
	1060	Jugganatpoorum ...	19 1 50	83 46 30	280	16 4 07	·37961	·37985	·38229	+ 14	+ 24	+ 20
65 N	948	Bobbili ...	18 34 30	83 21 10	400	30 12 09	·37992	·37968	·38217	+ 14	+ 24	+ 21
	701	Chicacole Road ...	18 24 30	83 54 20	100	25 11 04	·38039	·38105	·38371	+ 16	+ 26	+ 22
	947	Raiawalsa ...	18 13 50	83 1 30	3000	7 3 06	·37962	·38001	·38261	+ 14	+ 25	+ 22
	702	Vizianagram ...	18 6 40	83 24 0	200	1 1 10	·38363	·38337	·38603	+ 15	+ 26	+ 22
65 O	XII	WALTAIR ...	17 42 23	83 17 44	10	22 2 20	·38408	·38123	·38405	+ 16	+ 27	+ 24
66 A	385	Bāpatla ...	15 54 30	80 27 40	30	8 12 03	·37751	·37812	·38098	+ 12	+ 26	+ 26
	386	Ongole ...	15 30 20	80 3 20	40	10 12 03	·38554	·38615	·38907	+ 12	+ 27	+ 26
66 C	388	Arambakkam ...	13 32 40	80 4 30	40	13 12 03	·38168	·38239	·38574	+ 14	+ 30	+ 31
	XXXVII	PERAMBUR ...	13 6 40	80 15 0	10	5 2 20	·38645	·38297	·38642	+ 14	+ 30	+ 33
67 C	1375	Jaffna ...	9 39 25	80 0 40	10	27 2 13	·38506	·38381	·38756	+ 15	+ 30	+ 39
	1376	Elephant Pass ...	9 31 17	80 24 20	10	28 2 13	·38399	·38274	·38654	+ 15	+ 30	+ 40
	1373	Mullaittivu ...	9 16 13	80 48 50	10	25 2 13	·38362	·38237	·38622	+ 15	+ 30	+ 41
	1374	Mankulam ...	9 7 39	80 27 0	170	26 2 13	·38357	·38232	·38612	+ 15	+ 30	+ 40
67 D	1372	Vavuniya ...	8 45 30	80 30 20	290	24 2 13	·38386	·38261	·38646	+ 15	+ 30	+ 41
	1367	Horowupotana ...	8 33 10	80 49 50	290	18 2 13	·38356	·38232	·38622	+ 15	+ 30	+ 42
	1366	Anuradhapura ...	8 21 10	80 23 10	280	16 2 13	·38313	·38189	·38574	+ 15	+ 30	+ 41
	1369	Alutoya ...	8 13 15	80 54 0	300	20 2 13	·38398	·38274	·38664	+ 15	+ 30	+ 42
	1395	Kekirawa ...	8 2 8	80 36 20	450	1 4 13	·38332	·38204	·38594	+ 15	+ 30	+ 42
	1365	Galgamuwa ...	8 0 50	80 16 0	280	15 2 13	·38232	·38108	·38493	+ 15	+ 30	+ 41
67 H	1368	Trincomalee ...	8 34 40	81 14 10	0	19 2 13	·38498	·38374	·38769	+ 16	+ 30	+ 43
68 A	1371	Dambulla ...	7 52 40	80 39 20	530	22 2 13	·38348	·38224	·38614	+ 15	+ 30	+ 42
	1396	Nālanda ...	7 40 10	80 38 20	830	2 4 13	·38281	·38153	·38543	+ 15	+ 30	+ 42
	1364	Kurunegala ...	7 28 50	80 21 50	400	14 2 13	·38119	·37995	·38385	+ 14	+ 30	+ 42
	1397	Nugatenni ...	7 18 0	80 51 20	2910	2 4 13	·38278	·38150	·38545	+ 15	+ 30	+ 43
	1382	Kandy ...	7 17 40	80 37 40	1680	13 3 13	·38418	·38292	·38687	+ 15	+ 30	+ 43
	1362	Yatiyantota ...	7 2 0	80 17 20	110	9 2 13	·38423	·38304	·38688	+ 14	+ 29	+ 42
68 B	1383	Nuwara Eliya ...	6 57 39	80 46 20	6190	15 3 13	·38192	·38066	·38461	+ 15	+ 30	+ 43
	1384	Haputale ...	6 46 0	80 57 50	4730	20 3 13	·38140	·38017	·38411	+ 15	+ 29	+ 44
	1363	Ratnapura ...	6 41 40	80 24 20	100	10 2 13	·38156	·38041	·38424	+ 14	+ 28	+ 43
	1357	Bentota ...	6 25 50	80 0 10	10	2 2 13	·38007	·37901	·38267	+ 13	+ 26	+ 42
	1360	Deniyaya ...	6 21 20	80 33 40	1360	5 2 13	·38073	·37958	·38341	+ 14	+ 28	+ 43
	LXXV	GALLE ...	6 1 50	80 12 10	10	24 1 20	·38264	·37890	·38261	+ 13	+ 26	+ 43
68 C	1359	Matara ...	5 57 50	80 33 10	20	4 2 13	·37997	·37891	·38262	+ 14	+ 26	+ 43
68 E	1370	Topa Wewa ...	7 56 37	81 0 10	300	21 2 13	·38415	·38291	·38686	+ 15	+ 30	+ 43

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
68 E	1393	Kalcudah ...	7 55 20	81 34 50	10	28 3 13	·38437	·38310	·38710	+16	+30	+44
	1389	Batticaloa ...	7 42 31	81 42 40	10	25 3 13	·38374	·38247	·38652	+16	+30	+45
	1394	Mahaoya ...	7 32 4	81 21 20	200	29 3 13	·38327	·38199	·38599	+16	+30	+44
	1392	Kalmunai ...	7 24 50	81 50 40	10	27 3 13	·38349	·38222	·38627	+16	+30	+45
	1388	Bibile ...	7 9 28	81 14 10	800	24 3 13	·38265	·38138	·38538	+15	+30	+44
	1391	Tirukovil ...	7 7 50	81 52 10	10	27 3 13	·38332	·38205	·38610	+16	+30	+45
68 F	1390	Pottuvil ...	6 52 30	81 50 30	10	26 3 13	·38360	·38233	·38638	+16	+30	+45
	1387	Muppane ...	6 51 50	81 21 30	490	23 3 13	·38030	·37903	·38303	+15	+30	+44
	1385	Tanamalwila ...	6 25 52	81 8 10	230	21 3 13	·38110	·37987	·38381	+15	+29	+44
	1386	Kirinde ...	6 13 9	81 20 50	20	22 3 13	·38099	·37981	·38374	+15	+28	+45
	1361	Ambalantota ...	6 7 14	81 1 40	10	6 2 13	·38063	·37948	·38336	+14	+28	+44
72 B	LIII	BETTIAH ...	26 48 50	84 31 30	240	7 11 19	·35348	·35436	·35346	− 4	− 5	−12
	529	Pipra ...	26 29 30	84 59 10	200	21 4 04	·35659	·35650	·35583	− 2	− 2	−11
	526	Siwān ...	26 12 30	84 20 40	200	15 4 04	·35625	·35611	·35543	− 3	− 3	−10
72 C	999	Ekma ...	25 58 10	84 32 10	200	8 11 06	·34879	·34875	·34829	− 2	− 1	− 8
	527	Chāpra ...	25 48 10	84 43 20	200	2 2 11	·35972	·35972	·35932	− 1	0	− 8
	997 (*a*)	Ballia ...	25 45 10	84 10 10	200	20 2 11	·35472	·35474	·35428	− 2	− 1	− 8
	960	Dumraon ...	25 34 40	84 7 30	260	7 12 10	·35430	·35432	·35391	− 2	− 1	− 7
	1064	Arrah ...	25 33 0	84 40 20	190	3 11 06	·36007	·36007	·35983	0	+ 1	− 6
	1063	Ghoorsaree ...	25 22 30	84 9 10	220	1 11 06	·36554	·36552	·36522	− 1	0	− 6
	511	Jahānābād ...	25 13 40	84 59 50	220	13 3 04	·36170	·36175	·36167	+ 1	+ 2	− 4
72 D	487	Palmerganj ...	24 51 40	84 19 50	300	28 11 03	·36036	·36041	·36038	+ 1	+ 2	− 3
	XIV	GAYĀ ...	24 47 7	84 59 47	400	2 11 19	·36680	·36666	·36680	+ 3	+ 4	− 2
	881	Imāmganj ...	24 27 20	84 34 50	600	15 12 05	·36519	·36528	·36547	+ 3	+ 4	− 1
	882	Chatrā ...	24 12 10	84 53 0	1400	19 12 05	·36468	·36480	·36516	+ 4	+ 6	0
	486 (*a*)	Daltonganj ...	24 2 10	84 3 40	700	20 3 09	·36673	·36672	·36702	+ 3	+ 5	0
72 F	531	Bairagnia ...	26 43 50	85 16 30	280	25 4 04	·35424	·35415	·35342	− 2	− 3	−11
	528	Muzaffarpur ...	26 6 30	85 22 30	170	19 4 04	·35974	·35969	·35929	− 1	0	− 8
	534	Darbhangā ...	26 6 0	85 54 20	170	2 5 04	·35703	·35703	·35669	0	+ 1	− 8
72 G	998	Dighwāra ...	25 44 30	85 0 40	170	6 11 06	·35870	·35870	·35835	0	0	− 7
	510	Patna ...	25 35 30	85 12 20	170	11 3 04	·35968	·35973	·35949	+ 1	+ 1	− 6
	509	Bārh ...	25 28 20	85 42 50	150	10 3 04	·36060	·36070	·36063	+ 2	+ 3	− 5
72 H	488	Nawāda ...	24 52 30	85 32 50	500	30 11 03	·36458	·36478	·36498	+ 4	+ 5	− 2
	877	Ganwan ...	24 37 10	85 55 20	700	21 11 05	·36449	·36465	·36502	+ 5	+ 7	− 1
	880	Chorpāran ...	24 22 30	85 15 40	1340	11 12 05	·36443	·36458	·36494	+ 5	+ 6	0
	878	Bagodar ...	24 4 50	85 49 30	1250	25 11 05	·36572	·36594	·36652	+ 7	+ 8	+ 2
72 J	533	Nirmali ...	26 18 0	86 34 0	180	30 4 04	·35756	·35761	·35727	+ 1	+ 1	− 8
72 K	844	Madhipurā ...	25 55 40	86 47 30	140	28 1 06	·36065	·36071	·36059	+ 2	+ 3	− 6
	L	MONGHYR ...	25 23 10	86 27 50	150	11 11 19	·36281	·36270	·36280	+ 4	+ 5	− 4
	490	Bhāgalpur ...	25 14 0	86 57 40	150	4 12 03	·36298	·36323	·36344	+ 5	+ 6	− 3
72 L	508	Gidhaur ...	24 52 20	86 18 0	900	23 1 04	·36437	·36462	·36494	+ 5	+ 7	− 2
	507	Baidyanāth ...	24 30 50	86 38 0	1000	22 1 04	·36567	·36602	·36650	+ 7	+ 8	0
	876	Deogarh ...	24 29 0	86 41 0	1000	15 11 05	·36602	·36624	·36683	+ 7	+ 9	+ 1
	506	Giridih ...	24 10 50	86 19 20	1000	30 3 11	·36684	·36664	·36723	+ 7	+ 9	+ 1
72 N	532	Khanwaghat ...	26 22 10	87 3 20	180	27 4 04	·35702	·35707	·35685	+ 1	+ 3	− 8
	842	Kishanganj ...	26 5 50	87 56 50	160	23 1 06	·36086	·36098	·36103	+ 4	+ 5	− 5
72 O	843	Purnea ...	25 46 30	87 31 10	120	25 1 06	·36151	·36163	·36168	+ 4	+ 5	− 5
	841	Bārsoi ...	25 38 50	87 55 40	110	21 1 06	·36127	·36142	·36158	+ 5	+ 6	− 4
	491	Sāhibganj ...	25 14 50	87 38 20	110	6 12 03	·36496	·36526	·36564	+ 6	+ 8	− 2
72 P	875	Goddā ...	24 50 20	87 12 30	1000	12 11 05	·36137	·36159	·36202	+ 7	+ 8	− 1
	492	Pākaur ...	24 38 50	87 51 40	100	8 12 03	·36405	·36451	·36516	+ 9	+10	+ 1
	874	Dumkā ...	24 15 45	87 14 40	1000	19 2 11	·36680	·36659	·36729	+ 9	+10	+ 2
73 A	883	Balumath ...	23 50 10	84 47 40	1600	22 12 05	·37116	·37131	·37183	+ 5	+ 7	+ 2
	885	Lātehār ...	23 45 10	84 29 50	1240	29 12 05	·36987	·36999	·37051	+ 4	+ 7	+ 2
	884	Lohārdagā ...	23 25 30	84 41 10	2200	25 12 05	·36774	·36792	·36861	+ 6	+ 9	+ 3
73 B	906	Jashpur ...	22 52 40	84 8 30	2570	12 4 06	·36941	·36957	·37042	+ 6	+10	+ 5
	1032	Kolebira ...	22 42 20	84 42 0	1900	26 11 06	·37122	·37139	·37235	+ 8	+11	+ 6
	755	Rourkela ...	22 13 40	84 51 30	650	9 11 04	·36977	·37014	·37143	+ 9	+14	+ 9
	756	Bāmrā ...	22 3 30	84 17 30	800	11 11 04	·36993	·37026	·37149	+ 8	+13	+ 9
73 C	1166	Bonaigarh ...	21 49 0	84 57 30	500	18 12 07	·37294	·37304	·37444	+10	+15	+10
	1165	Boraghat ...	21 31 35	84 33 30	800	11 12 07	·37506	·37517	·37668	+10	+16	+11
	937	Charmal ...	21 6 20	84 12 50	500	18 11 05	·37537	·37568	·37730	+10	+17	+12
73 D	936	Hondapa ...	20 56 30	84 42 10	400	14 11 05	·37670	·37708	·37892	+12	+19	+14
	939	Bisapara ...	20 24 50	84 12 30	1600	30 11 05	·37630	·37667	·37862	+12	+20	+15
	941	Daspallā ...	20 18 40	84 54 0	400	9 12 05	·37763	·37806	·38012	+14	+21	+16
	940	Mojagodo ...	20 1 10	84 31 0	400	4 12 05	·37828	·37871	·38088	+14	+22	+17

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
73 E	879	Hazāribāgh ...	23 59 40	85 22 10	2000	28 11 05	·36838	·36857	·36915	+ 6	+ 8	+ 2
	1030	Rānchī ...	23 22 40	85 19 30	2160	17 11 06	·36664	·36681	·36761	+ 8	+ 10	+ 4
	1029	Silli ...	23 21 10	85 50 40	880	3 11 06	·36736	·36755	·36846	+ 9	+ 11	+ 5
	1031	Jeria ...	23 2 40	85 1 0	2100	21 11 06	·36875	·36892	·36983	+ 8	+ 11	+ 5
73 F	LI	SINI ...	22 47 0	85 56 50	700	2 3 20	·37487	·37373	·37486	+ 10	+ 13	+ 7
	1173	Chaibāsa ...	22 32 30	85 48 30	750	5 1 08	·37051	·37062	·37186	+ 11	+ 14	+ 8
	754	Goilkera ...	22 30 20	85 21 30	1000	6 11 04	·37164	·37206	·37324	+ 10	+ 13	+ 8
	1172	Jaintigarh ...	22 4 10	85 40 40	1230	10 1 08	·37275	·37286	·37432	+ 11	+ 16	+ 10
73 G	1171	Keonjhar ...	21 37 40	85 35 30	1200	6 1 08	·37385	·37397	·37559	+ 12	+ 17	+ 12
	1167	Pāl Laharā ...	21 25 50	85 11 30	700	12 12 07	·37383	·37395	·37563	+ 12	+ 18	+ 12
	1170	Gutgaon ...	21 24 10	85 53 20	500	2 1 08	·37516	·37530	·37709	+ 14	+ 19	+ 13
	1169	Kantolo ...	21 7 20	85 37 40	600	30 12 07	·37323	·37337	·37527	+ 14	+ 20	+ 14
73 H	1168	Tālcher ...	20 57 10	85 14 30	200	25 12 07	·37653	·37666	·37856	+ 13	+ 20	+ 14
	935	Rasul ...	20 37 20	85 19 10	400	10 11 05	·37820	·37864	·38070	+ 14	+ 21	+ 16
	695	Cuttack ...	20 27 20	85 53 50	90	13 11 04	·37748	·37814	·38031	+ 16	+ 22	+ 17
	697	Tāpang ...	20 3 20	85 34 50	50	16 11 04	·37852	·37918	·38146	+ 16	+ 23	+ 18
73 I	873	Jāmtāra ...	23 58 40	86 48 50	700	3 3 11	·36678	·36654	·36730	+ 9	+ 11	+ 2
	505	Kātrāsgarh ...	23 48 0	86 18 0	800	4 12 10	·36799	·36780	·36855	+ 8	+ 10	+ 3
	501	Purūlia ...	23 19 30	86 22 50	800	5 1 04	·37290	·37340	·37437	+ 10	+ 13	+ 5
73 J	499	Ghātsila ...	22 35 0	86 28 20	400	1 1 04	·37094	·37154	·37284	+ 12	+ 15	+ 8
	1174	Rairangpur ...	22 15 21	86 11 0	1000	19 1 08	·37189	·37200	·37346	+ 12	+ 16	+ 10
73 K	1176	Baripādā ...	21 55 50	86 43 0	200	29 1 08	·37347	·37360	·37523	+ 14	+ 18	+ 11
	1175	Kusmi ...	21 50 0	86 15 10	1500	24 1 08	·37842	·37854	·38017	+ 13	+ 18	+ 11
	LIX	BALASORE ...	21 30 30	86 54 40	50	27 2 20	·37764	·37577	·37762	+ 16	+ 20	+ 13
	693	Bhadrakh ...	21 5 10	86 31 0	50	10 11 04	·37780	·37846	·38047	+ 16	+ 21	+ 15
73 L	694	Jenapur ...	20 51 30	86 4 10	100	12 11 04	·37370	·37436	·37642	+ 16	+ 21	+ 16
	1180	Chāndbali ...	20 46 10	86 43 40	20	18 2 08	·37947	·37963	·38175	+ 18	+ 22	+ 16
	1179	Balikuda ...	20 8 30	86 16 10	50	12 2 08	·38079	·38095	·38329	+ 18	+ 24	+ 18
73 M	494	Sainthia ...	23 56 50	87 41 20	170	2 5 08	·36783	·36790	·36877	+ 11	+ 12	+ 3
	504	Rānīganj ...	23 35 30	87 7 30	300	20 1 11	·37083	·37056	·37154	+ 11	+ 13	+ 4
	495	Burdwān ...	23 15 0	87 52 40	100	16 12 03	·37070	·37136	·37256	+ 13	+ 15	+ 6
	502	Bānkurā ...	23 13 30	87 4 10	400	11 1 04	·37132	·37192	·37306	+ 12	+ 14	+ 6
73 N	503	Garbeta ...	22 50 40	87 18 50	300	13 1 04	·37142	·37207	·37343	+ 13	+ 16	+ 8
	498	Midnapore ...	22 25 20	87 17 30	200	30 12 03	·37241	·37311	·37458	+ 14	+ 17	+ 9
73 O	1177	Dāntān ...	21 56 10	87 16 40	80	1 2 08	·37243	·37258	·37427	+ 16	+ 19	+ 11
	1178	Contai ...	21 46 40	87 44 30	40	5 2 08	·37588	·37603	·37783	+ 17	+ 20	+ 12
74 A	1062	Govindpur ...	19 29 50	84 25 20	300	29 4 07	·37904	·37929	·38162	+ 15	+ 23	+ 19
	LX	BERHAMPUR (Ganjām) ...	19 18 10	84 48 40	80	24 2 20	·38271	·38018	·38268	+ 16	+ 25	+ 20
74 B	1059	Parlakimedi ...	18 47 10	84 5 0	300	11 4 07	·38015	·38041	·38296	+ 15	+ 25	+ 21
	700	Palasa ...	18 45 20	84 26 0	80	23 11 04	·38076	·38142	·38403	+ 16	+ 26	+ 21
74 E	696	Purī ...	19 48 40	85 50 10	20	15 11 04	·38056	·38126	·38371	+ 17	+ 25	+ 19
	698	Rambha ...	19 32 0	85 6 0	30	18 11 04	·37988	·38054	·38298	+ 16	+ 24	+ 20
78 B	XIII	DARJEELING ...	26 59 42	88 16 56	8100	15 11 19	·35633	·35665	·35632	+ 1	+ 2	− 9
	839	Siliguri ...	26 42 20	88 26 10	390	17 1 06	·35683	·35689	·35672	+ 2	+ 3	− 7
	1001	Tariya ...	26 15 40	88 23 40	200	15 11 06	·36127	·36136	·36136	+ 4	+ 5	− 6
	838	Chilhāti ...	26 14 30	88 48 10	210	15 1 06	·35955	·35967	·35978	+ 4	+ 6	− 5
78 C	1000	Ranisankail ...	25 54 8	88 15 10	150	12 11 06	·35964	·35975	·35991	+ 5	+ 6	− 4
	836	Pārbatipur ...	25 39 10	88 55 10	110	12 12 08	·36258	·36258	·36291	+ 6	+ 8	− 3
	840	Radhikāpur ...	25 38 30	88 26 50	110	19 1 06	·36246	·36264	·36297	+ 6	+ 8	− 3
78 D	829	Bulbulchundī ...	24 58 50	88 14 30	100	24 12 05	·36319	·36343	·36398	+ 8	+ 10	− 1
	LXV	SANTAHAR ...	24 48 10	88 59 20	50	19 11 19	·36774	·36697	·36774	+ 10	+ 12	+ 1
	828	Nawābganj ...	24 35 40	88 16 0	100	20 12 05	·36650	·36677	·36748	+ 9	+ 11	+ 1
	830	Mālānchi ...	24 18 40	88 57 50	50	29 12 05	·36941	·36974	·37067	+ 11	+ 13	+ 3
	493	Azīmganj ...	24 14 10	88 15 10	100	10 12 03	·36834	·36910	·36992	+ 11	+ 12	+ 2
78 F	845	Banarhat ...	26 47 31	89 1 20	400	1 2 06	·35695	·35704	·35693	+ 3	+ 4	− 7
	835	Jainti ...	26 41 24	89 36 30	500	8 1 06	·35152	·35164	·35164	+ 4	+ 5	− 6
	834	Cooch Behār ...	26 18 30	89 26 20	160	6 1 06	·36023	·36038	·36060	+ 5	+ 7	− 4
	846	Dhubrighāt ...	26 1 2	89 59 50	100	4 2 06	·36315	·36335	·36379	+ 7	+ 9	− 2
78 G	833	Kaunia ...	25 47 10	89 25 0	100	4 1 06	·36173	·36194	·36238	+ 7	+ 9	− 2
	LXXVI	PHULCHARI ...	25 11 40	89 37 0	50	11 4 20	·36472	·36406	·36472	+ 9	+ 11	0
	837	Panchabibi ...	25 11 30	89 1 40	80	13 1 06	·36362	·36386	·36446	+ 8	+ 10	0

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES		
										1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
78 H	821	Jagannāthganj ...	24 41 10	89 45 50	40	4 12 05	·36800	·36834	·36922	+11	+13	+ 2
	822	Porabari ...	24 13 17	89 51 30	30	6 12 05	·36855	·36895	·37005	+13	+15	+ 4
78 J	1002	Cherpanguri ...	26 33 2	90 8 10	300	23 11 06	·35861	·35872	·35894	+ 5	+ 7	− 4
	1003	Bijni ...	26 28 50	90 42 10	300	30 11 06	·36144	·36157	·36190	+ 6	+ 8	− 3
	847	Goālpāra ...	26 11 10	90 37 40	140	7 2 06	·36116	·36136	·36180	+ 7	+ 9	− 2
78 K	1009	Rongrenggiri ...	25 33 0	90 33 20	2000	3 1 07	·36546	·36564	·36636	+ 9	+12	0
	1008	Nongsobal ...	25 32 8	90 52 50	1000	29 12 06	·36707	·36727	·36804	+10	+12	+ 1
	1010	Damalgiri ...	25 31 40	90 6 50	500	9 1 07	·36547	·36565	·36631	+ 9	+11	0
	1011	Nalitābāri ...	25 5 10	90 11 10	50	15 1 07	·36661	·36681	·36758	+10	+12	+ 1
78 L	1012	Asma ...	24 54 10	90 53 20	50	20 1 07	·36684	·36707	·36806	+12	+14	+ 3
	820	Mymensingh ...	24 46 0	90 23 40	50	25 1 11	·36743	·36714	·36813	+12	+14	+ 3
	819	Sripur ...	24 12 50	90 29 0	50	1 12 05	·36932	·36975	·37085	+14	+15	+ 4
78 N	1005	Jiabor ...	26 43 33	91 42 30	400	8 12 06	·35971	·35983	·36022	+ 6	+ 9	− 3
	1004	Eatacharkuchi ...	26 30 40	91 14 10	170	4 12 06	·35674	·35686	·35725	+ 6	+ 9	− 3
	848	Kholabanda ...	26 10 0	91 8 16	130	8 2 06	·36103	·36123	·36173	+ 7	+10	− 2
	LXXVII	PALĀSBĀRI ...	26 7 40	91 32 40	150	18 4 20	·36242	·36181	·36242	+ 8	+11	− 1
78 O	863	Shillong ...	25 35 4	91 53 40	4900	23 3 06	·36468	·36496	·36579	+10	+13	+ 1
	1007	Maokersa ...	25 31 10	91 25 0	5000	23 12 06	·36360	·36380	·36463	+10	+13	+ 1
	1014	Sunāmganj ...	25 4 10	91 23 30	40	28 1 07	·36721	·36744	·36843	+12	+14	+ 3
78 P	1015	Sylhet ...	24 53 0	91 52 0	40	2 2 07	·36760	·36785	·36895	+13	+15	+ 4
	1013	Ajmiriganj or Abidābād	24 33 50	91 14 10	50	26 1 07	·36863	·36888	·36998	+13	+15	+ 4
	868	Tilāgāon ...	24 26 40	91 57 30	50	11 4 06	·36956	·36994	·37115	+14	+16	+ 5
	869	Shāistāganj ...	24 16 50	91 26 10	30	14 4 06	·36957	·36995	·37116	+14	+16	+ 5
	1182	Singurajabari ...	24 7 57	91 53 50	900	20 3 08	·37089	·37101	·37233	+15	+17	+ 6
79 A	827	Plassey ...	23 46 20	88 17 10	40	16 12 05	·37125	·37162	·37266	+12	+14	+ 4
	825	Chuādānga ...	23 38 40	88 51 40	40	12 12 05	·36939	·36979	37094	+13	+15	+ 5
	826	Krishnagar ...	23 22 39	88 29 10	30	14 12 05	·37012	·37055	·37181	+14	+16	+ 6
	811	Bangong ...	23 1 50	88 50 20	20	11 11 05	·37221	·37268	·37405	+15	+17	+ 7
79 B	LXXIV	BARRACKPORE	22 46 29	88 21 39	20	14 3 20	·37472	...	·37470	...	...	+ 8
		BARRACKPORE OBSERVATORY ...	22 46 29	88 21 39	20	...	...	·37320	...	+16	+16	...
	496	Calcutta ...	22 33 40	88 17 30	20	26 12 03	·37277	·37357	·37510	+16	+18	+ 9
	497	Ulubāria ...	22 28 20	88 6 20	20	28 12 03	·37327	·37407	·37565	+16	+18	+10
	810	Canning ...	22 18 20	88 39 50	10	8 11 05	·37389	·37446	·37610	+18	+19	+10
	809	Diamond Harbour ...	22 11 20	88 11 40	10	6 11 05	·37399	·37453	·37622	+17	+19	+11
79 E	824	Kumār Khāli ...	23 51 50	89 14 0	40	10 12 05	·36885	·36925	·37035	+13	+15	+ 4
	823	Faridpur ...	23 37 10	89 51 10	20	8 12 05	·37064	·37110	·37231	+15	+16	+ 5
	812	Jessore ...	23 9 50	89 12 40	20	13 11 05	·37177	·37227	·37364	+16	+17	+ 7
79 F	813	Khulnā ...	22 49 0	89 33 20	0	15 11 05	·37268	·37324	·37472	+18	+18	+ 8
	815	Morelganj ...	22 27 10	89 51 50	0	20 11 05	·37487	·37549	·37719	+20	+20	+10
79 I	818	Dolāiganj ...	23 42 8	90 25 30	20	29 11 05	·37043	·37089	·37221	+15	+17	+ 6
	816	Chāndpur ...	23 14 0	90 38 0	0	23 11 05	·37277	·37333	·37481	+18	+18	+ 8
	817	Mādāripur ...	23 10 50	90 12 30	10	26 11 05	·37263	·37316	·37459	+17	+18	+ 7
79 J	814	Barisāl ...	22 41 10	90 22 0	10	18 11 05	·37421	·37483	·37642	+20	+19	+ 8
79M	870	Kamalasagar ...	23 44 40	91 9 10	30	16 4 06	·37142	·37185	·37322	+16	+17	+ 7
	1181	Amarpur ...	23 31 58	91 39 30	200	8 3 08	·37254	·37269	·37417	+18	+18	+ 8
	LXVI	LĀKSHĀM ...	23 15 40	91 7 20	30	6 4 20	·37508	·37358	·37506	+18	+18	+ 8
	1184	Golabari ...	23 5 0	91 58 50	500	10 4 08	·37439	·37454	·37613	+20	+19	+ 9
79 N	872	Noākhāli ...	22 48 20	91 6 30	20	21 4 06	·37446	·37500	·37665	+20	+20	+ 9
	1028	Mirsarai ...	22 46 40	91 37 50	20	9 5 07	·37518	·37552	·37722	+21	+20	+10
	1027	Bhatiyari ...	22 26 10	91 45 0	30	7 5 07	·37623	·37661	·37842	+23	+21	+11
83 B	1006	Udalguri ...	26 45 50	92 6 50	300	12 12 06	·35941	·35953	·35998	+ 6	+10	− 3
	851	Tezpur ...	26 37 50	92 48 20	200	16 2 06	·36078	·36098	·36154	+ 7	+11	− 2
	850	Mangaldai ...	26 28 49	92 8 20	200	13 2 06	·36108	·36128	·36184	+ 7	+11	− 2
	861	Kāmpur ...	26 9 40	92 39 30	200	14 3 06	·36211	·36236	·36308	+ 9	+12	0
	862	Jagi Road ...	26 7 20	92 11 30	200	16 3 06	·36419	·36444	·36516	+ 9	+12	0
83 C	864	Shangpang ...	25 28 48	92 21 0	4500	27 3 06	·36383	·36413	·36501	+11	+13	+ 2
	865	Korongma ...	25 26 8	92 43 30	3200	31 3 06	·36547	·36580	·36674	+12	+14	+ 2
83 D	867	Karimganj ...	24 52 0	92 22 10	50	9 4 06	·36812	·36847	·36957	+13	+15	+ 4
	XXI	SILCHAR ...	24 49 14	92 47 27	70	29 11 19	·37033	·36918	·37033	+14	+15	+ 5
	1022	Kalosib ...	24 15 16	92 42 10	1900	29 3 07	·37080	·37106	·37238	+15	+17	+ 6
83 F	852	Behally Mookh ...	26 46 19	93 21 50	250	22 2 06	·35914	·35934	·35990	+ 7	+11	− 2
	858	Oating ...	26 26 13	93 59 30	400	7 3 06	·35941	·35966	·36033	+ 9	+12	− 1

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
83 G	859	Manipur Road ...	25 54 50	93 43 50	500	10 3 06	·36444	·36472	·36555	+ 10	+ 13	+ 1
	860	Lumding ...	25 44 52	93 10 41	500	5 2 11	·36688	·36661	·36744	+ 11	+ 13	+ 1
	866	Hāflang ...	25 11 29	93 1 10	2000	5 4 06	·36262	·36298	·36397	+ 13	+ 14	+ 3
83 H	1020	Manipur ...	24 48 31	93 56 30	2600	6 3 07	·36899	·36924	·37045	+ 14	+ 16	+ 5
	1021	Lengbu ...	24 44 39	93 24 10	4000	14 3 07	·36956	·36981	·37102	+ 14	+ 16	+ 5
83 I	XXII	DIBRUGARH ...	27 29 12	94 54 35	340	24 11 19	·35852	·35816	·35851	+ 5	+ 10	− 5
83 J	854	Nāzirā ...	26 54 26	94 43 50	400	27 2 06	·35986	·36006	·36057	+ 7	+ 11	− 9
	853	Kokila Mookh ...	26 51 9	94 8 54	250	24 2 06	·35978	·35998	·36049	+ 7	+ 11	− 3
	1016	Mokokchung ...	26 19 40	94 31 50	4500	14 2 07	·36370	·36387	·36454	+ 9	+ 12	− 1
	1017	Wokha ...	26 5 40	94 15 40	5000	19 2 07	·36537	·36556	·36634	+ 10	+ 13	0
83 K	1018	Kohīmā ...	25 40 10	94 6 40	5000	23 2 07	·36543	·36565	·36659	+ 12	+ 14	+ 2
	1019	Kairong ...	25 18 40	94 2 30	4000	2 3 07	·36680	·36704	·36803	+ 13	+ 14	+ 3
83 L	990	Homalin ...	24 51 50	94 54 30	450	22 3 07	·36993	·37020	·37130	+ 15	+ 15	+ 4
	991	Paungbyin ...	24 16 0	94 48 20	400	25 3 07	·37082	·37112	·37244	+ 17	+ 17	+ 6
	1187	Tamu ...	24 12 49	94 19 0	600	26 11 07	·37099	·37118	·37255	+ 17	+ 17	+ 7
83 M	857	Tāiāp ...	27 40 10	95 33 40	500	5 3 06	·35734	·35748	·35778	+ 5	+ 10	− 6
	856	Mārgheritā ...	27 17 20	95 41 20	500	3 3 06	·35905	·35925	·35966	+ 7	+ 11	− 5
	855	Sapekhati ...	27 6 41	95 9 41	450	1 3 06	·35954	·35974	·36020	+ 7	+ 11	− 4
83 P	989	Nananton ...	24 45 30	95 40 30	1000	13 3 07	·37041	·37070	·37186	+ 16	+ 16	+ 4
	988	Manyu ...	24 19 20	95 33 40	1000	8 3 07	·37322	·37353	·37485	+ 17	+ 17	+ 6
84 A	1023	Aijal ...	23 43 28	92 43 10	3700	8 4 07	·37235	·37266	·37414	+ 18	+ 18	+ 8
	1024	Tenzol ...	23 18 22	92 47 10	3000	15 4 07	·37334	·37368	·37527	+ 20	+ 19	+ 9
84 B	1025	Lungleh ...	22 53 40	92 44 50	3500	20 4 07	·37515	·37552	·37722	+ 22	+ 20	+ 10
	1026	Rāngāmāti ...	22 38 10	92 11 50	140	6 4 08	·37603	·37619	·37800	+ 22	+ 21	+ 11
	1183	Shilghati ...	22 12 20	92 8 30	50	30 3 08	·37707	·37725	·37917	+ 24	+ 22	+ 12
84 C	1110	Chakaria ...	21 46 0	92 5 50	50	8 5 07	·37817	·37860	·38063	+ 26	+ 23	+ 13
	1217	Kaletwa ...	21 44 0	92 47 50	200	26 11 08	·37946	·37948	·38151	+ 27	+ 23	+ 13
	1216	Paletwa ...	21 18 14	92 51 40	100	21 11 08	·38042	·38045	·38264	+ 29	+ 24	+ 15
84 D	1215	Kyauktaw ...	20 50 25	92 58 40	30	17 11 08	·38173	·38177	·38407	+ 31	+ 25	+ 16
	1109	Maungdaw ...	20 49 50	92 21 40	10	4 5 07	·38079	·38130	·38360	+ 31	+ 25	+ 16
	1108	Rathedaung ...	20 29 10	92 45 10	20	1 5 07	·38193	·38248	·38489	+ 33	+ 26	+ 17
	XX	AKYAB ...	20 8 6	92 53 37	20	3 4 20	·38603	·38346	·38598	+ 35	+ 27	+ 18
84 E	1188	Lenacot ...	23 54 27	93 47 50	4700	3 12 07	·37204	·37223	·37371	+ 18	+ 18	+ 8
	1189	Tunzan ...	23 35 28	93 41 30	3700	6 12 07	·37284	·37304	·37457	+ 19	+ 18	+ 9
	1190	Fort White ...	23 14 49	93 46 30	4000	11 12 07	·37392	·37414	·37578	+ 21	+ 19	+ 10
84 F	1191	Tao ...	22 45 50	93 11 20	5000	21 3 08	·37577	·37594	·37775	+ 22	+ 21	+ 11
	1192	Haka ...	22 38 30	93 37 20	6000	28 3 08	·37612	·37629	·37810	+ 23	+ 21	+ 11
84 H	1098	Kyindwe ...	20 58 10	93 50 10	3000	13 3 07	·38094	·38150	·38380	+ 31	+ 25	+ 16
	1106	Myohaung ...	20 35 20	93 11 20	100	23 4 07	·38177	·38233	·38468	+ 33	+ 25	+ 17
	1107	Myebon ...	20 4 0	93 22 20	20	27 4 07	·38366	·38425	·38677	+ 35	+ 27	+ 18
84 I	LXXIX	KINDAT ...	23 44 10	94 26 0	300	4 3 20	·37457	·37308	·37456	+ 19	+ 18	+ 8
	993	Kalewa ...	23 11 20	94 18 20	200	4 4 07	·37551	·37568	·37738	+ 21	+ 20	+ 10
84 J	1194	Sihaung ...	22 51 0	94 3 20	500	9 4 08	·37664	·37681	·37856	+ 23	+ 20	+ 11
	994	Peginma ...	22 43 50	94 42 30	200	8 4 07	·37691	·37731	·37906	+ 23	+ 20	+ 11
	1193	Kan ...	22 24 40	94 6 20	600	4 4 08	·37762	·37781	·37967	+ 25	+ 21	+ 12
	1086	Thitkyidaing ...	22 1 21	94 32 10	500	20 1 07	·37822	·37873	·38070	+ 26	+ 22	+ 13
84 K	1085	Shwekondaung ...	21 49 10	94 6 30	1000	15 1 07	·37873	·37926	·38134	+ 27	+ 23	+ 14
	1083	Sabē ...	21 27 20	94 35 0	450	5 1 07	·38026	·38084	·38297	+ 29	+ 23	+ 15
	1084	Pasōk ...	21 22 56	94 11 0	1000	9 1 07	·38020	·38077	·38290	+ 29	+ 23	+ 15
	1099	Thōnlanbyi ...	21 4 20	94 16 10	2000	20 3 07	·38112	·38166	·38390	+ 30	+ 24	+ 16
84 L	1088	Seikpyu ...	20 54 20	94 47 30	200	29 1 07	·38180	·38240	·38469	+ 31	+ 24	+ 17
	1097	Tauksok ...	20 43 30	94 8 10	700	7 3 07	·38171	·38229	·38464	+ 32	+ 25	+ 17
	1089	Kyaukyē ...	20 34 40	94 48 30	200	31 1 07	·38289	·38352	·38592	+ 33	+ 25	+ 18
	1096	Sidoktaya ...	20 25 50	94 14 0	400	3 3 07	·38257	·38319	·38565	+ 34	+ 26	+ 18
	1090	Minbu ...	20 10 1	94 53 20	170	3 2 07	·38390	·38457	·38714	+ 35	+ 27	+ 19
	1095	Ngape ...	20 4 47	94 28 0	450	1 3 07	·38387	·38451	·38708	+ 35	+ 27	+ 19
84 M	971	Kawlin ...	23 47 30	95 41 10	600	11 12 06	·37469	·37508	·37651	+ 19	+ 18	+ 7
	987	Yeshin ...	23 43 10	95 7 20	750	2 3 07	·37352	·37387	·37535	+ 19	+ 18	+ 8
	970	Kanbalu ...	23 13 10	95 32 40	500	9 12 06	·37553	·37598	·37762	+ 22	+ 19	+ 10
84 N	985	Thabeikkyin ...	22 52 50	95 58 20	300	19 2 07	·37656	·37699	·37869	+ 23	+ 20	+ 10
	969	Shwebo ...	22 35 0	95 41 50	360	7 12 06	·37768	·37818	·37999	+ 24	+ 21	+ 11
	986	Singu or (Ngasingn) ...	22 32 50	95 59 30	250	21 2 07	·37844	·37890	·38071	+ 25	+ 21	+ 11

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation.	Value corrected to date.	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
84 N	968	Paukkan ...	22 14 10	95 52 10	370	5 12 06	·37827	·37881	·38067	+26	+21	+12
	963	Alon ...	22 13 30	95 4 50	200	19 11 06	·37913	·37968	·38165	+26	+22	+13
84 Q	1087	Salingyi ...	21 58 30	95 4 40	200	23 1 07	·38200	·38252	·38454	+27	+22	+14
	962	Wunbye ...	21 56 10	95 32 20	300	17 11 06	·37921	·37978	·38180	+27	+22	+14
	1081	Myingyan ...	21 28 31	95 23 40	250	20 12 06	·38066	·38125	·38338	+29	+23	+15
	1082	Pakokku ...	21 20 0	95 5 30	200	24 12 06	·38011	·38069	·38287	+29	+23	+16
	1080	Mahlaing ...	21 5 40	95 38 40	400	18 12 06	·38166	·38227	·38451	+30	+24	+16
84 P	1100	Chaunggya ...	20 44 0	95 13 30	700	27 3 07	·38185	·38241	·38476	+32	+25	+17
	1101	Myindēgyi ...	20 26 30	95 36 30	900	31 3 07	·38340	·38398	·38638	+33	+25	+18
	1102	Taungdwingyi ...	20 0 0	95 32 50	500	2 4 07	·38451	·38512	·38769	+35	+27	+19
85 E	1218	Kyaukpyu ...	19 25 55	93 33 30	30	4 12 08	·38582	·38585	·38865	+37	+30	+20
	1219	Ramree ...	19 5 50	93 52 0	30	7 12 08	·38684	·38687	·38978	+38	+31	+21
85 F	1220	Cheduba ...	18 51 11	93 43 30	20	11 12 08	·38779	·38781	·39083	+38	+32	+22
85 I	1094	Myothit ...	19 45 20	94 38 10	800	26 2 07	·38447	·38513	·38781	+36	+28	+20
	1240	Sakaman ...	19 38 54	94 0 10	50	8 3 09	·38607	·38601	·38870	+37	+29	+19
	1093	Mindon ...	19 21 10	94 44 10	200	24 2 07	·38627	·38697	·38982	+38	+30	+21
	1239	Mai ...	19 17 10	94 8 0	100	5 3 09	·38661	·38655	·38940	+38	+30	+21
85 J	1238	Taungup ...	18 51 40	94 14 50	4000	3 3 09	·38816	·38810	·39112	+38	+32	+22
	1237	Tabi ...	18 38 16	94 40 20	100	25 2 09	·38857	·38852	·39165	+38	+33	+23
	1221	Sandoway ...	18 27 50	94 22 0	100	18 12 08	·38861	·38862	·39181	+38	+34	+23
85 K	1222	Kyeintali ...	17 59 58	94 29 10	50	24 12 08	·38949	·38950	·39281	+38	+36	+23
	1223	Gwa ...	17 35 20	94 34 50	50	30 12 08	·39023	·39023	·39365	+38	+37	+24
	1224	Bawmi ...	17 18 30	94 34 40	50	1 1 09	·39092	·39092	·39440	+38	+38	+24
85 L	1225	Tazin ...	16 54 20	94 23 40	50	4 1 09	·39162	·39162	·39527	+38	+40	+25
	LXXI	BASSEIN ...	16 46 20	94 44 30	50	1 2 20	·39511	·39144	·39509	+38	+40	+25
	1226	Ngo-Ton-Kaung ...	16 30 20	94 18 0	50	10 1 09	·39214	·39213	·39578	+37	+40	+25
	1228	Lebutta ...	16 8 40	94 45 20	50	20 1 09	·39337	·39335	·39705	+37	+40	+26
85 M	1091	Sinbaungwe ...	19 43 0	95 9 30	170	5 2 07	·38521	·38589	·38857	+36	+28	+20
	1103	Hngetpyawgyin ...	19 34 20	95 39 20	900	4 4 07	·38575	·38638	·38911	+36	+28	+21
	1092	Thayetmyo ...	19 19 30	95 11 10	150	21 2 07	·38627	·38698	·38988	+38	+30	+22
85 N	1104	Taungle ...	18 53 30	95 40 20	200	11 4 07	·38746	·38811	·39107	+38	+31	+22
	LXX	PROME ...	18 49 40	95 13 20	100	31 12 19	·39111	·38816	·39112	+38	+31	+22
	1067	Paungdē ...	18 29 50	95 29 50	100	15 11 06	·38803	·38884	·39107	+38	+33	+23
	1236	Petye ...	18 18 30	95 8 20	100	19 2 09	·38892	·38887	·39206	+38	+34	+23
85 O	1066	Minhla ...	17 58 30	95 42 20	70	13 11 06	·38897	·38978	·39308	+38	+35	+24
	1235	Mēzaligōn ...	17 52 50	95 14 0	50	17 2 09	·39042	·39037	·39373	+38	+36	+24
	1069	Henzada Shore ...	17 38 30	95 29 10	40	19 11 06	·38956	·39036	·39378	+38	+37	+24
	1065	Palōn ...	17 26 20	95 56 0	70	11 11 06	·39012	·39093	·39435	+38	+37	+24
	1070	Athōk ...	17 12 13	95 5 2	50	21 11 06	·39046	·39126	·39480	+38	+39	+24
	1234	Yandoon ...	17 2 50	95 38 10	20	11 2 09	·39207	·39202	·39561	+38	+39	+25
85 P	1231	Ma-ubin ...	16 44 20	95 39 10	10	1 2 09	·39180	·39177	·39542	+38	+40	+25
	1229	Wakema ...	16 36 0	95 10 10	10	24 1 09	·39216	·39213	·39578	+38	+40	+25
	1232	Pyapon ...	16 17 10	95 40 50	10	4 2 09	·39265	·39261	·39631	+37	+40	+26
	1230	Mya-Tha ...	16 14 10	95 17 0	10	27 1 09	·39210	·39207	·39577	+37	+40	+26
86 C	1334	Paget Island ...	13 25 50	92 50 0	10	15 1 11	·39517	·39439	·39832	+31	+38	+33
86 D	1333	Port Andaman ...	12 48 10	92 40 20	10	13 1 11	·39510	·39433	·39836	+30	+38	+35
	1332	Port Anson ...	12 18 0	92 43 0	10	11 1 11	·39538	·39463	·39870	+29	+37	+37
86 I	1227	Ka-Baung-Hmaw ...	15 59 50	94 16 40	30	13 1 09	·39281	·39280	·39655	+36	+40	+27
86 M	1233	Kadon-Kani ...	15 46 40	95 12 50	10	7 2 09	·39285	·39281	·39661	+35	+40	+28
87 A	XXIII	PORT BLAIR ...	11 39 53	92 42 48	250	9 12 19	·39970	·39567	·39973	+29	+36	+38
92 C	974	Taungni ...	25 10 20	96 44 20	540	16 12 06	·37060	·37091	·37191	+15	+15	+2
92 D	973	Mohnyin ...	24 46 30	96 21 20	680	15 12 06	·37183	·37216	·37327	+16	+16	+3
	972	Naba ...	24 15 0	96 11 10	480	12 12 06	·37273	·37310	·37437	+18	+17	+5
92 G	LXVIII	MYITKYINA ...	25 23 20	97 24 10	470	19 2 20	·36298	·36214	·36298	+14	+14	0
92 H	976	Sinbo ...	24 46 40	97 2 50	450	24 12 06	·37053	·37085	·37190	+16	+15	+3
	LXIX	BHAMO ...	24 15 30	97 13 10	400	24 2 20	·37466	·37349	·37465	+18	+16	+4
93 A	984	Tagaung ...	23 30 10	96 0 50	300	16 2 07	·37401	·37440	·37594	+21	+19	+8
	983	Wainglōn ...	23 27 50	96 36 30	800	11 2 07	·37332	·37372	·37520	+21	+18	+8
93 B	982	Mogok ...	22 56 0	96 31 20	3700	4 2 07	·37754	·37798	·37968	+23	+20	+10

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
93 B	965	Gokteik Viaduct ...	22 20 10	96 51 30	2500	24 11 06	·37843	·37896	·38077	+ 25	+ 21	+ 11
	964	Maymyo ...	22 2 20	96 28 0	3700	22 11 06	·37923	·37980	·38177	+ 27	+ 22	+ 13
	LXVII	MANDALAY ...	22 0 13	96 5 58	250	16 3 20	·38253	·38053	·38250	+ 27	+ 22	+ 13
93 C	1157	Kyawkku ...	21 48 20	96 56 10	3100	26 3 08	·38038	·38059	·38256	+ 27	+ 22	+ 13
	1079	Kyaukse ...	21 36 30	96 8 0	280	16 12 06	·37917	·37974	·38176	+ 28	+ 22	+ 14
	1158	Lawk Sawk ...	21 14 40	96 52 30	3000	1 4 08	·38178	·38200	·38413	+ 29	+ 23	+ 15
	1078	Thēdaw ...	21 5 10	96 3 50	440	10 12 06	·38178	·38240	·38464	+ 30	+ 24	+ 16
93 D	LXXVIII	KALAW ...	20 37 40	96 34 10	4300	22 3 20	·38608	·38375	·38604	+ 31	+ 24	+ 17
	1077	Shweda ...	20 31 10	96 4 50	530	8 12 06	·38334	·38400	·38640	+ 32	+ 25	+ 18
	1200	Pinlaung ...	20 7 50	96 46 50	4700	21 1 08	·38418	·38449	·38689	+ 33	+ 25	+ 18
93 E	978	Sikaw ...	23 50 0	97 4 0	2600	4 1 07	·37314	·37354	·37486	+ 20	+ 17	+ 6
	979	Namhkam ...	23 50 0	97 40 10	2400	11 1 07	·37342	·37382	·37509	+ 20	+ 17	+ 5
	980	Hsenwi (Theinni) ...	23 17 40	97 57 10	2100	17 1 07	·37522	·37565	·37708	+ 22	+ 18	+ 7
	981	Mān-Ton ...	23 15 0	97 7 0	4000	27 1 07	·37571	·37613	·37767	+ 22	+ 19	+ 8
93 F	XIX	LASHIO ...	22 56 12	97 44 48	2700	12 3 20	·37904	·37748	·37902	+ 23	+ 19	+ 8
	967	Manpwe ...	22 50 40	97 35 30	2200	29 11 06	·37624	·37672	·37831	+ 23	+ 19	+ 9
	966	Hsipaw ...	22 36 40	97 17 50	1800	26 11 06	·37757	·37807	·37977	+ 24	+ 20	+ 10
	1156	Man Li ...	22 5 50	97 31 30	2500	21 3 08	·37974	·37994	·38175	+ 26	+ 21	+ 11
93 G	1155	Nawngla-Yaw ...	21 38 17	97 44 30	3300	15 3 08	·38081	·38102	·38294	+ 27	+ 22	+ 12
	1154	Wān-Ho-hwe ...	21 9 0	97 34 40	4500	11 3 08	·38211	·38234	·38442	+ 29	+ 23	+ 14
	1153	Wān Hoko ...	21 0 6	97 57 0	3500	6 3 08	·38285	·38309	·38517	+ 29	+ 23	+ 14
93 H	1159	Taunggyi ...	20 46 30	97 2 50	4700	5 4 08	·38335	·38357	·38581	+ 30	+ 24	+ 16
	1149	Mōgnai ...	20 30 17	97 52 0	3000	12 2 08	·38399	·38426	·38644	+ 31	+ 23	+ 16
	1201	Loi-put ...	20 17 30	97 18 40	4000	28 1 08	·38444	·38474	·38703	+ 32	+ 24	+ 17
	1202	Mawkmai ...	20 13 10	97 43 30	1600	4 2 08	·38466	·38495	·38724	+ 32	+ 24	+ 17
93 J	1135	Mōng Ma ...	22 45 7	98 16 10	3500	18 11 07	·37726	·37753	·37927	+ 24	+ 19	+ 8
	1136	Mōng Yai ...	22 25 26	98 2 30	2700	23 11 07	·37855	·37883	·38053	+ 25	+ 20	+ 10
	1137	Mōng Awt ...	22 2 16	98 22 30	2500	28 11 07	·37974	·38002	·38172	+ 26	+ 20	+ 10
93 K	1138	Hsupwo ...	21 49 45	98 50 20	4600	4 12 07	·38009	·38037	·38207	+ 26	+ 20	+ 10
	1152	Wān Kawng ...	21 23 22	98 22 30	1800	29 2 08	·38185	·38208	·38400	+ 28	+ 22	+ 12
93 L	1151	Mōngpu ...	20 54 38	98 44 30	1500	23 2 08	·38300	·38325	·38522	+ 29	+ 22	+ 13
	1150	Kengtawng ...	20 45 8	98 18 10	2200	18 2 08	·38356	·38382	·38590	+ 30	+ 23	+ 14
	1148	Mōngpan ...	20 19 11	98 22 10	2200	6 2 08	·38449	·38477	·38695	+ 31	+ 23	+ 16
	1146	Mōng Tun ...	20 18 4	98 54 10	1700	25 1 08	·38481	·38509	·38722	+ 30	+ 23	+ 15
93 O	1141	Mōngsang ...	21 50 38	99 41 30	3000	24 12 07	·38002	·38028	·38193	+ 26	+ 20	+ 9
	1139	Mōng Ping ...	21 21 1	99 1 10	2600	10 12 07	·38218	·38247	·38428	+ 27	+ 21	+ 11
	1140	Kengtung ...	21 16 56	99 37 0	1500	17 12 07	·38219	·38247	·38428	+ 27	+ 21	+ 11
93 P	1144	Mōng Hai ...	20 46 14	99 48 10	2000	16 1 08	·38352	·38379	·38571	+ 28	+ 22	+ 12
	1145	Mōng Hsāt ...	20 31 35	99 15 50	4000	22 1 08	·38424	·38451	·38653	+ 29	+ 22	+ 14
94 A	1076	Pyokkwe ...	19 57 6	96 13 34	400	6 12 06	·38442	·38512	·38763	+ 34	+ 26	+ 19
	1198	Thaungbyin ...	19 55 20	96 31 10	1000	4 1 08	·38514	·38548	·38799	+ 34	+ 26	+ 19
	1199	Thitkyit ...	19 37 50	96 40 30	2000	12 1 08	·38607	·38641	·38903	+ 35	+ 27	+ 20
	1075	Myohla ...	19 24 40	96 16 10	240	4 12 06	·38698	·38773	·39046	+ 36	+ 28	+ 21
94 B		**TOUNGOO OBSY.** ...	18 55 45	96 27 3	160			·38792	·39081	+ 38	+ 30	+ 22
	1074	Nyaungbintha ...	18 24 17	96 27 21	100	30 11 06	·38720	·38799	·39106	+ 38	+ 32	+ 23
94 C	1073	Pyuntazā ...	17 53 0	96 43 20	40	29 11 06	·38832	·38911	·39235	+ 38	+ 34	+ 24
	1072	Pegu ...	17 20 30	96 28 40	30	27 11 06	·39037	·39116	·39452	+ 38	+ 36	+ 24
94 D	1105	Thamaing ...	16 51 49	96 6 55	20	16 4 07	·39126	·39191	·39550	+ 38	+ 39	+ 25
94 E	1203	Ta-Supteng ...	19 51 20	97 45 10	600	10 2 08	·38567	·38596	·38836	+ 32	+ 25	+ 18
	1205	Loikaw ...	19 40 20	97 13 10	2500	24 2 08	·38612	·38641	·38897	+ 34	+ 26	+ 20
	1204	Namon ...	19 21 42	97 30 50	600	13 2 08	·38714	·38744	·39006	+ 34	+ 27	+ 20
	1206	Kreuko ...	19 15 9	97 2 30	4000	5 3 08	·38676	·38705	·38972	+ 35	+ 27	+ 21
94 F	1207	Pasawng ...	18 52 10	97 18 40	350	13 3 08	·38803	·38831	·39115	+ 35	+ 29	+ 22
	1208	Salween ...	18 26 57	97 21 40	350	18 3 08	·38910	·38938	·39233	+ 36	+ 30	+ 23
	1209	Papun ...	18 3 22	97 27 20	200	27 3 08	·38854	·38881	·39182	+ 36	+ 31	+ 23
94 G	1210	Maipali ...	17 30 45	97 38 40	100	4 4 08	·39079	·39105	·39423	+ 35	+ 33	+ 24
	1197	Kyaikto ...	17 18 40	97 1 0	50	21 12 07	·39218	·39256	·39592	+ 37	+ 36	+ 24
	1211	Hlaingbwe ...	17 7 0	97 49 10	50	7 4 08	·39177	·39203	·39527	+ 35	+ 34	+ 24
94 H	1196	Thaton ...	16 55 8	97 20 20	50	19 12 07	·39175	·39212	·39553	+ 36	+ 36	+ 25
	LXXII	MOULMEIN ...	16 29 40	97 37 30	50	27 12 19	·39624	·39289	·39624	+ 35	+ 35	+ 25
	1246	Amherst ...	16 4 50	97 34 0	50	3 2 09	·39367	·39364	·39710	+ 35	+ 36	+ 26
94 I	1147	Mōnghta ...	19 51 14	98 34 0	1400	1 2 08	·38576	·38607	·38836	+ 34	+ 24	+ 17

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The values of Horizontal Force reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES		
										1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.		c.g.s.	c.g.s.	c.g.s.	γ	γ	γ
94 L	1245	Myawadi ...	16 41 18	98 29 50	500	9 1 09	·39294	·39293	·39605	+34	+32	+24
	1244	Kyondo ...	16 35 45	98 3 50	50	1 1 09	·39307	·39307	·39636	+34	+34	+25
	1241	Thanba Ya ...	16 7 20	98 2 10	50	24 11 08	·39370	·39373	·39708	+34	+35	+25
	1243	Mitan ...	16 0 10	98 26 30	300	24 12 08	·39394	·39395	·39718	+34	+33	+25
95 E	1247	Anin ...	15 39 40	97 44 0	10	7 2 09	·39371	·39367	·39707	+34	+35	+26
	1248	Ye ...	15 14 40	97 51 10	30	11 2 09	·39501	·39497	·39836	+34	+34	+27
95 I	1242	Kyunghaung ...	15 32 11	98 15 20	200	4 12 08	·39443	·39445	·39773	+34	+33	+26
95 J	1214	Shintali ...	14 29 14	98 10 0	100	5 5 08	·39519	·39540	·39866	+32	+31	+28
	1249	Myitta ...	14 10 50	98 29 50	500	25 2 09	·39575	·39570	·39885	+33	+30	+27
	XVIII	TAVOY ...	14 5 3	98 12 14	30	8 1 20	·39938	·39618	·39938	+33	+30	+28
95 K	1250	Gonnyinseik ...	13 41 20	98 18 50	20	6 3 09	·39598	·39593	·39912	+32	+29	+29
	1251	Mali ...	13 6 50	98 19 40	30	10 3 09	·39783	·39778	·40091	+31	+28	+29
95 L	1213	Palaw ...	12 58 0	98 44 20	50	20 4 08	·39661	·39683	·39990	+31	+27	+29
	1212	Mergui ...	12 26 50	98 38 50	50	15 4 08	·39616	·39638	·39944	+31	+26	+30
95 P	1255	Tenasserim ...	12 5 40	99 3 30	30	19 4 09	·39745	·39738	·40027	+30	+24	+29
96 I	1252	Kan-Hmaw ...	11 48 20	98 33 20	50	23 3 09	·39692	·39686	·39991	+30	+25	+31
	1253	Bokpyin ...	11 16 40	98 49 30	20	28 3 09	·39748	·39742	·40035	+29	+23	+31
96 K	LXXX	VICTORIA POINT ...	9 59 30	98 35 20	100	21 1 20	·40092	·39800	·40090	+28	+20	+34
102 C	1142	Hsoplamhsaplwe ...	21 23 37	100 14 20	2000	2 1 08	·38186	·38212	·38382	+26	+20	+10
102 D	1143	Nam-Lang-Paliao ...	20 49 47	100 20 50	1400	11 1 08	·38410	·38437	·38618	+28	+21	+11

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and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
34 J	359	Chaman ...	30 56 10	66 25 20	4450	28 3 10	44 43·2	44 31·8	46 3·3	+6·4	+9·0	+7·5
	358	Saiyid Hamīd ...	30 35 20	66 43 20	4800	3 4 03	43 8·9	43 45·4	45 16·9	+6·4	+9·0	+7·5
	III	QUETTA ...	30 12 21	66 59 55	5500	11 12 19	44 40·7	43 9·6	44 41·1	+6·5	+9·0	+7·5
34 K	1264	Mastung Road ...	29 52 40	66 50 30	5400	7 4 10	42 48·8	42 37·3	44 9·4	+6·6	+9·1	+7·5
	1263	Kurdagāp ...	29 45 30	66 26 10	5400	7 4 10	42 32·9	42 20·4	43 53·0	+6·6	+9·1	+7·6
	1111	Nushki No. 1 ...	29 33 10	66 1 0	3310					+6·6	+9·2	+7·7
	1262	Nushki ...	29 32 40	66 2 0	3200	3 4 10	42 13·4	42 0·5	43 34·2	+6·6	+9·2	+7·7
	1112	Nushki No. 2 ...	29 32 0	66 0 40	3160							
34 N	430	Hindubāgh ...	30 49 20	67 44 30	5800	2 4 04	43 40·5	44 11·2	45 41·0	+6·4	+8·8	+7·4
	431	Chinjan ...	30 34 10	67 55 50	7100	4 4 04	43 1·2	43 31·3	45 1·1	+6·4	+8·8	+7·4
	357	Mangi ...	30 22 0	67 28 10	5200	1 4 03	42 57·0	43 34·7	45 5·1	+6·5	+8·9	+7·4
34 O	360	Ab-i-Gum ...	29 48 10	67 23 10	2160	6 4 03	42 3·5	42 41·1	44 12·6	+6·6	+9·0	+7·5
	54 (*a*)	Sibi ...	29 32 39	67 51 40	450	21 3 10	42 30·6	42 19·0	43 50·5	+6·6	+9·0	+7·5
35 M	289	Shāhdādpur ...	27 51 0	67 54 40	200	14 12 02	39 9·9	39 50·6	41 23·2	+6·8	+9·1	+7·6
	290	Ghaibi Dero ...	27 36 0	67 38 50	200	17 12 02	38 37·1	39 18·3	40 51·4	+6·9	+9·1	+7·7
	291	Gotemado ...	27 11 20	67 35 30	150	20 12 02	37 50·1	38 31·4	40 4·5	+6·9	+9·1	+7·7
	48	Sita Road ...	27 2 30	67 51 10	150	20 12 01	37 30·9	38 19·2	39 51·8	+6·9	+9·1	+7·6
35 N	292	Hairo Khān ...	26 49 20	67 28 10	170	26 12 02	37 14·5	37 56·4	39 29·5	+7·0	+9·1	+7·7
	293	Tando Rahim Khān ...	26 30 30	67 25 40	150	29 12 02	36 45·4	37 27·2	39 0·3	+7·0	+9·1	+7·7
	49	Bubāk Road ...	26 29 0	67 46 10	110	18 3 10	37 24·3	37 12·8	38 45·9	+7·0	+9·1	+7·7
	294	Narani ...	26 7 30	67 32 50	1000	2 1 03	35 55·2	36 38·0	38 11·1	+7·1	+9·1	+7·7
35 O	295	Pokrum Lundi ...	25 48 30	67 44 30	1000	5 1 03	35 22·9	36 5·7	37 38·8	+7·1	+9·1	+7·7
	296	Belo ...	25 47 10	67 26 50	1000	9 1 03	35 16·2	35 58·0	37 31·6	+7·2	+9·1	+7·8
	297	Kund ...	25 34 50	67 19 0	600	12 1 03	34 57·6	35 41·0	37 14·6	+7·2	+9·1	+7·8
	298	Kharr ...	25 17 20	67 7 50	300	15 1 03	34 27·6	35 11·6	36 46·3	+7·3	+9·2	+7·9
35 P	II	KARACHI ...	24 49 24	67 2 28	20	16 12 19	35 51·0	34 16·6	35 51·3	+7·4	+9·2	+7·9
	39	Dābheji ...	24 48 54	67 29 50	100	28 11 01	33 28·8	34 20·6	35 54·2	+7·3	+9·1	+7·8
	917	Mirpur Sakro ...	24 33 10	67 37 0	80	5 12 05	33 32·5	33 55·2	35 28·8	+7·3	+9·1	+7·8
	916	Shāhbandar ...	24 10 0	67 54 0	50	1 12 05	32 46·8	33 9·3	34 42·9	+7·3	+9·1	+7·8
38 K	316	Thal ...	33 21 50	70 33 50	2500	17 4 03	47 31·0	48 1·9	49 25·4	+5·9	+8·0	+7·1
	313	Latammar ...	33 7 0	70 51 50	1500	5 4 03	47 7·3	47 41·4	49 4·9	+5·9	+8·0	+7·1
38 L	312	Sarai Naurang ...	32 49 40	70 47 0	1000	2 4 03	46 48·4	47 22·2	48 45·7	+6·0	+8·0	+7·1
	311	Darra Pezu ...	32 19 20	70 44 20	1050	30 3 03	46 10·3	46 45·9	48 10·0	+6·1	+8·1	+7·1
	310	Tānk ...	32 12 30	70 23 20	850	26 3 03	46 13·5	46 48·9	48 14·1	+6·1	+8·2	+7·2
38 N	87	Dargai ...	34 30 10	71 53 50	1540	24 3 02	48 53·1	49 31·6	50 52·8	+5·6	+7·7	+7·0
	XXVI	PESHAWAR ...	34 0 40	71 33 40	1050	26 11 19	50 9·9	48 48·8	50 10·6	+5·7	+7·8	+7·0
38 O	315	Kohāt ...	33 34 40	71 26 30	1650	14 4 03	47 46·3	48 19·1	49 41·5	+5·8	+7·9	+7·0
	314	Bānda Dāud Shāh ...	33 16 40	71 11 10	1900	9 4 03	47 25·5	47 57·5	49 20·4	+5·9	+7·9	+7·1
38 P	91	Mussan ...	32 53 30	71 43 20	1300	3 4 02	46 51·4	47 28·7	48 51·1	+5·9	+7·9	+7·0
	317	Dhanda ...	32 46 30	71 57 40	1300	22 4 03	46 51·9	47 26·1	48 48·5	+5·9	+7·9	+7·0
	XXVII	KUNDIAN ...	32 27 30	71 28 20	650	1 12 19	48 56·8	47 33·9	48 57·4	+6·0	+8·0	+7·1
39 B	429	Kila Saifulla ...	30 42 50	68 21 10	5110	30 3 04	43 23·9	43 54·6	45 23·8	+6·4	+8·7	+7·4
	428	Kalu Killa ...	30 41 40	68 43 20	4900	28 3 04	43 26·0	43 56·7	45 25·9	+6·4	+8·7	+7·4
	432	Loralai ...	30 21 30	68 36 30	4450	7 4 04	42 54·3	43 24·4	44 53·6	+6·4	+8·7	+7·4
39 C	361	Spintangi ...	29 55 50	68 4 50	1900	9 4 03	42 17·0	42 54·1	44 24·5	+6·5	+8·9	+7·4
	433	Puzza ...	29 54 0	68 42 40	5100	12 4 04	42 12·6	42 43·2	44 13·0	+6·5	+8·8	+7·4
	417	Lehri ...	29 10 42	68 12 40	490	19 2 04	41 16·6	41 48·9	43 20·4	+6·6	+9·0	+7·5
	418	Chirdi Dhabbar ...	29 5 17	68 43 10	1600	23 2 04	40 53·8	41 26·1	42 56·5	+6·6	+7·9	+7·4
39 D	53	Bellpat ...	28 59 40	68 0 20	300	30 12 01	40 46·1	41 33·0	43 4·5	+6·7	+9·0	+7·5
	299	Hamidpowhar ...	28 26 0	68 46 50	200	15 2 03	39 48·3	40 27·8	41 58·7	+6·7	+8·9	+7·5
	52	Jhatpat ...	28 22 20	68 19 20	180	28 12 01	39 47·3	40 34·2	42 5·7	+6·7	+9·0	+7·5
	288	Chachur ...	28 12 10	68 9 20	200	10 12 02	39 42·6	40 23·9	41 55·4	+6·8	+9·0	+7·5
39 E	426	Fort Sandeman ...	31 20 40	69 27 10	4600	21 3 04	44 26·5	44 56·3	46 23·8	+6·2	+8·5	+7·3
39 F	427	Musāfirpur ...	30 58 3	69 8 30	4840	26 3 04	43 52·2	44 22·4	45 50·5	+6·3	+8·6	+7·3
	424	Mūsā Khel Bāzār ...	30 52 30	69 48 50	4450	12 3 04	43 43·9	44 14·1	45 41·6	+6·3	+8·5	+7·3
	425	Mekhtar ...	30 29 0	69 20 20	4200	17 3 04	43 5·4	43 36·1	45 4·2	+6·4	+8·6	+7·3
	423	Kingri ...	30 26 20	69 49 0	4060	9 3 04	43 4·3	43 35·0	45 2·5	+6·4	+8·5	+7·3
	422	Rakhni ...	30 2 50	69 55 30	3330	6 3 04	42 26·2	42 56·9	44 25·0	+6·4	+8·6	+7·3
39 G	421	Mat ...	29 42 20	69 40 0	3200	1 3 04	41 55·2	42 26·4	43 54·5	+6·5	+8·6	+7·3
	420	Chat ...	29 20 21	69 24 30	2700	27 2 04	41 22·9	41 54·1	43 23·3	+6·5	+8·7	+7·4
	419	Dera Bugti ...	29 2 0	69 9 20	1480	24 2 04	40 51·0	41 23·3	42 53·1	+6·6	+8·8	+7·4
39 H	302	Tuziani ...	28 56 40	69 54 40	350	24 2 03	40 51·4	41 29·8	42 58·5	+6·5	+8·7	+7·3
	301	Bārū ...	28 33 0	69 39 30	300	21 2 03	39 58·8	40 37·7	42 6·9	+6·6	+8·7	+7·4

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
39 H	300	Bela (Taz) ...	28 23 40	69 14 10	230	18 2 03	39 48·0	40 27·5	41 57·3	+6·7	+8·8	+7·4
	26	Reti ...	28 5 10	69 51 20	240	10 2 04	39 27·0	39 57·6	41 26·3	+6·6	+8·7	+7·3
	56	Khairpur Deherki ...	28 2 40	69 41 30	240	8 1 02	39 4·0	39 49·5	41 18·7	+6·7	+8·7	+7·4
39 I	309	Draband ...	31 44 0	70 19 40	780	22 3 03	45 1·5	45 37·5	47 3·3	+6·2	+8·3	+7·2
	308	Gurwāli ...	31 21 50	70 29 0	700	18 3 03	44 24·1	45 0·1	46 25·9	+6·2	+8·3	+7·2
	864	Dorata ...	31 5 10	70 55 30	500	15 4 03	44 16·2	44 51·5	46 17·3	+6·2	+8·3	+7·2
39 J	307	Jhok Bodo ...	30 55 0	70 32 20	680	15 3 03	43 53·0	44 29·0	45 55·4	+6·2	+8·4	+7·2
	863	Daera Dīnpanāh ...	30 34 10	70 55 30	440	13 4 03	43 29·8	44 5·7	45 31·5	+6·3	+8·3	+7·2
	306	Mamdāni ...	30 25 20	70 36 50	600	11 3 03	43 18·0	43 54·5	45 20·9	+6·3	+8·4	+7·2
	305	Vidor ...	30 5 10	70 32 20	500	8 3 03	42 34·5	43 11·6	44 39·1	+6·4	+8·5	+7·3
	862	Ghāzi Ghāt ...	30 4 50	70 51 50	400	11 4 03	42 30·9	43 6·8	44 33·2	+6·3	+8·4	+7·2
39 K	304	Ganehar ...	29 44 0	70 20 20	450	4 3 03	42 17·4	42 54·5	44 22·0	+6·4	+8·5	+7·3
	303	Dirigri ...	29 24 30	70 8 30	450	1 3 03	41 41·3	42 19·0	43 47·1	+6·5	+8·6	+7·3
39 L	68 (a)	Khānpur ...	28 38 50	70 39 10	290	14 1 02	39 50·0	40 35·5	42 3·6	+6·5	+8·6	+7·3
	57	Sādikābād ...	28 18 10	70 7 40	270	24 12 02	40 2·4	40 41·1	42 9·8	+6·6	+8·7	+7·3
	244	Marnwala Toba ...	28 15 34	70 38 50	300	20 12 02	39 42·9	40 22·1	41 50·2	+6·5	+8·6	+7·3
	245	Bher Tibba ...	28 0 27	70 22 10	300	22 12 02	39 31·8	40 11·0	41 39·1	+6·6	+8·6	+7·3
39 M	866	Shāh Alam ...	31 58 40	71 9 0	600	19 4 03	45 25·3	46 0·1	47 24·2	+6·1	+8·1	+7·1
	865	Bhakkar ...	31 37 10	71 3 0	560	16 4 03	44 58·0	45 32·8	46 57·5	+6·1	+8·2	+7·1
	822	Nāwankot ...	31 6 30	71 31 0	500	13 5 03	44 3·1	44 37·8	46 2·5	+6·2	+8·2	+7·1
39 N	328	Rangpur ...	30 31 0	71 34 50	450	17 5 03	43 10·8	43 45·5	45 10·2	+6·2	+8·2	+7·1
	76 (a)	Multān ...	30 10 50	71 26 50	400	7 12 12	43 57·1	43 24·7	44 50·5	+6·3	+8·3	+7·2
	324	Muzaffargarh ...	30 4 40	71 10 50	380	20 5 03	42 27·0	43 2·3	44 28·7	+6·3	+8·4	+7·2
39 O	77	Gilawāla ...	29 43 6	71 28 20	380	28 2 02	41 49·2	42 32·0	43 58·4	+6·3	+8·4	+7·2
	IV	BAHAWALPUR ...	29 24 23	71 40 35	380	5 12 19	43 38·4	42 13·6	43 38·9	+6·3	+8·3	+7·1
	37	Samāsata ...	29 21 12	71 32 30	370	18 11 02	41 27·7	42 6·1	43 31·9	+6·3	+8·3	+7·2
	59	Chanigot ...	29 5 11	71 1 30	340	16 1 02	40 54·8	41 39·6	43 6·6	+6·4	+8·5	+7·2
39 P	25	Derāwar Fort ...	28 46 20	71 20 10	350	25 2 02	40 48·6	41 32·8	42 59·2	+6·4	+8·4	+7·2
	24	Khāngarh ...	28 22 10	71 42 50	350	7 12 02	40 7·5	40 46·5	42 11·8	+6·4	+8·3	+7·1
	242	Sarwar ka Toba ...	28 17 34	71 6 40	350	13 12 02	39 42·6	40 22·3	41 49·3	+6·5	+8·5	+7·2
40 A	XXIV	RUK JUNCTION ...	27 48 23	68 38 20	200	8 12 19	40 56·0	39 25·0	40 56·5	+6·8	+9·0	+7·5
	47 (a)	Lārkāna ...	27 32 28	68 11 50	200	18 12 01	38 29·6	39 16·6	40 48·6	+6·8	+9·0	+7·6
	45	Khairpur ...	27 31 7	68 44 20	190	30 1 03	38 18·5	38 58·4	40 29·9	+6·8	+9·0	+7·5
40 B	44	Kandiāro Road ...	26 59 20	68 20 50	150	9 12 01	37 25·1	38 13·7	39 45·7	+6·9	+9·0	+7·6
	30	Tujjul ...	26 52 50	68 59 20	200	21 3 02	37 8·1	37 54·8	39 25·7	+6·8	+8·9	+7·5
	43	Daur ...	26 27 40	68 18 30	120	7 12 01	36 21·0	37 9·1	38 41·1	+6·9	+9·0	+7·6
	31	Mubarik Shāh Syud ...	26 23 40	68 56 20	200	24 3 02	36 14·1	37 0·2	38 31·1	+6·9	+8·9	+7·5
	50	Sann ...	26 1 40	68 6 50	100	6 2 03	35 43·6	36 24·0	37 56·0	+7·0	+9·0	+7·6
40 C	42	Shāhdādpur ...	25 55 39	68 37 53	90	5 12 01	35 26·1	36 15·6	37 47·6	+7·0	+9·0	+7·6
	51	Petāro ...	25 32 0	68 19 10	80	26 12 01	34 45·0	35 34·1	37 6·1	+7·1	+9·0	+7·6
	133	Rahoki Junction ...	25 24 30	68 28 0	70	12 2 02	34 31·3	35 19·4	36 51·4	+7·0	+9·0	+7·6
	41	Hyderābād ...	25 22 25	68 22 30	70	23 1 03	34 36·0	35 16·6	36 48·6	+7·1	+9·0	+7·6
	40	Jhimpir ...	25 1 49	68 0 50	100	30 11 01	33 54·4	34 44·7	36 17·8	+7·2	+9·1	+7·7
40 D	914	Talher ...	24 53 0	68 49 0	60	24 11 05	34 5·3	34 27·1	35 59·1	+7·1	+9·0	+7·6
	915	Mīrpur Batoro ...	24 44 10	68 15 20	30	28 11 05	33 52·2	34 14·4	35 47·5	+7·2	+9·1	+7·7
	9	Kirria ...	24 20 0	68 46 40	20	28 11 03	32 43·9	33 20·6	34 53·1	+7·2	+9·0	+7·7
40 E	55	Pano Akil ...	27 50 50	69 6 50	220	26 11 02	38 54·4	39 34·4	41 4·8	+6·7	+8·9	+7·4
	27	Lūnwara Tur ...	27 44 30	69 38 40	300	7 3 02	38 35·7	39 21·8	40 51·6	+6·7	+8·8	+7·4
	28	Piareh-ka-Tour ...	27 18 20	69 32 20	300	10 3 02	37 50·6	38 36·5	40 6·3	+6·7	+8·8	+7·4
40 F	29	Jussio ...	26 48 40	69 29 20	300	13 3 02	36 58·6	37 45·0	39 14·8	+6·8	+8·8	+7·4
	36	Sumrahu ...	26 29 0	69 59 40	300	11 4 02	36 33·9	37 17·4	38 46·6	+6·8	+8·7	+7·4
	32	Bakār ...	26 5 10	69 9 0	100	27 3 02	35 44·3	36 30·3	38 1·2	+6·9	+8·9	+7·5
40 G	34	Rānāhu ...	25 56 10	69 47 20	250	3 4 02	35 32·2	36 15·7	37 44·9	+6·8	+8·7	+7·4
	33	Khipro ...	25 49 20	69 22 20	50	31 3 02	35 19·0	36 5·2	37 35·5	+6·9	+8·8	+7·5
	XXXI	MIRPUR KHAS ...	25 31 19	69 1 40	50	19 12 19	37 4·4	35 33·8	37 4·7	+7·0	+8·9	+7·5
	135 (a)	Dhoro Naro ...	25 29 51	69 33 50	50	12 2 03	34 53·0	35 32·8	37 3·1	+6·9	+8·8	+7·5
	912	Mithrea ...	25 9 42	70 0 0	300	16 11 05	35 14·9	35 36·1	37 5·3	+6·9	+8·7	+7·4
	913	Pireh Kolachi ...	25 1 27	69 26 20	40	20 11 05	34 30·4	34 52·0	36 22·3	+7·0	+8·8	+7·5
40 H	7 (a)	Diplo ...	24 28 0	69 34 30	20	20 11 03	33 25·5	34 1·1	35 32·0	+7·0	+8·9	+7·5
	8	Rahim-ki-Bāzār ...	24 19 0	69 9 0	10	23 11 03	32 52·6	33 29·0	35 1·0	+7·1	+9·0	+7·6
40 I	243	Islāmgarh ...	27 51 30	70 48 40	400	16 12 02	39 13·9	39 53·3	41 20·3	+6·6	+8·5	+7·2
	416	Kalu ...	27 25 7	70 17 28	400	6 2 04	38 25·8	38 56·5	40 24·6	+6·6	+8·6	+7·3
40 J	410	Ravilahu ...	26 52 35	70 2 20	300	19 1 04	37 26·0	37 58·1	39 26·8	+6·7	+8·7	+7·3
	411	Khubha ...	26 49 8	70 40 9	500	22 1 04	37 25·2	37 56·4	39 24·0	+6·7	+8·6	+7·2

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
40 J	409	Jejrawa ...	26 15 23	70 38 51	400	15 1 04	36 12·6	36 45·3	38 13·4	+6·7	+8·6	+7·3
	85	Nasīr Aresur ...	26 9 20	70 7 30	300	7 4 02	35 58·6	36 43·5	38 12·2	+6·8	+8·7	+7·3
40 K	262	Jaisingder ...	25 45 41	70 24 30	300	10 2 03	35 32·5	36 12·0	37 40·1	+6·8	+8·6	+7·3
	261	Bhachbhar ...	25 44 0	70 59 0	700	8 2 03	36 23·3	37 3·0	38 30·0	+6·7	+8·5	+7·2
	911	Khisar ...	25 21 49	70 28 40	400	12 11 05	34 40·2	35 1·2	36 29·3	+6·8	+8·6	+7·3
40 L	4 (*a*)	Sheria Bheel ...	24 43 50	70 52 50	200	13 11 03	33 23·7	33 58·1	35 26·2	+6·8	+8·6	+7·3
	6 (*a*)	Islamkot ...	24 42 10	70 9 50	200	17 11 03	33 34·4	34 9·5	35 38·7	+6·9	+8·7	+7·4
	5	Tūr Lūnian ...	24 39 0	70 31 40	200	15 11 03	34 6·3	34 41·1	36 10·3	+6·9	+8·7	+7·4
40 M	241	Lohita Tibba ...	27 55 5	71 32 10	400	10 12 02	39 49·4	40 28·8	41 54·7	+6·5	+8·4	+7·1
	414	Satiaya ...	27 25 15	71 39 9	430	31 1 04	38 13·7	38 43·9	40 9·2	+6·5	+8·3	+7·1
	415	Dīga ...	27 24 15	71 0 2	430	3 2 04	38 27·1	38 57·7	40 24·7	+6·6	+8·5	+7·2
40 N	413	Hurdikot ...	26 57 25	71 51 0	700	12 1 09	39 10·1	39 10·0	40 35·3	+6·5	+8·3	+7·1
	412	Kakrasar ...	26 55 36	71 12 10	750	25 1 04	37 35·1	38 6·3	39 32·7	+6·6	+8·4	+7·2
	407	Wallār ...	26 29 11	71 48 42	800	9 1 04	39 56·3	40 29·5	41 54·8	+6·6	+8·3	+7·1
	408	Mandai G.T.S. ...	26 21 10	71 10 40	1110	12 1 04	36 19·1	36 51·6	38 18·0	+6·7	+8·4	+7·2
40 O	260	Kavas ...	25 52 17	71 31 40	500	7 3 10	36 10·2	35 58·7	37 24·6	+6·7	+8·4	+7·1
	LXXIII	BĀRMER ...	25 44 35	71 26 40	650	2 2 20	37 43·6	36 16·5	37 42·9	+6·7	+8·4	+7·2
	406	Mondawla G.T.S. ...	25 24 47	71 52 10	370	3 1 04	35 3·9	35 36·3	37 1·6	+6·7	+8·3	+7·1
	910	Kunra ...	25 22 30	71 2 40	700	8 11 05	35 1·5	35 23·1	36 50·1	+6·8	+8·5	+7·2
40 P	3	Dutwa ...	24 52 50	71 28 50	100	10 11 03	34 1·3	34 35·6	36 2·6	+6·8	+8·5	+7·2
	2	Sāchor ...	24 45 20	71 45 50	200	8 11 03	33 56·2	34 31·3	35 57·7	+6·8	+8·4	+7·2
	1	Pāvdasān ...	24 29 20	71 53 50	350	6 11 03	33 43·9	34 18·1	35 44·5	+6·8	+8·4	+7·2
	923	Suigām ...	24 9 10	71 21 10	50	10 1 06	32 41·7	33 3·1	34 30·6	+6·9	+8·5	+7·3
	18	Diodar ...	24 6 30	71 46 10	200	22 12 03	32 26·8	32 59·9	34 26·9	+6·8	+8·5	+7·2
41 A	10 (*a*)	Lakhpat ...	23 49 20	68 46 50	50	1 12 03	31 55·8	32 32·2	34 4·7	+7·2	+9·0	+7·7
	11 (*a*)	Murr ...	23 33 20	68 56 40	300	4 12 03	31 47·3	32 23·2	33 55·7	+7·2	+9·0	+7·7
	919	Jakhan ...	23 13 10	68 43 10	50	17 12 05	30 52·8	31 14·8	32 48·4	+7·3	+9·1	+7·8
41 B	926	Dwārkā ...	22 14 40	68 57 10	30	28 1 06	29 38·8	30 1·0	31 35·1	+7·4	+9·1	+7·9
41 E	920	Banri ...	23 44 47	69 29 35	50	22 12 05	32 24·6	32 45·8	34 17·2	+7·1	+8·9	+7·6
	12 (*a*)	Nakhtarāna ...	23 20 50	69 15 10	400	7 12 03	31 28·2	32 4·4	33 36·9	+7·2	+9·0	+7·7
	13	Kalyānpur ...	23 13 40	69 35 40	400	9 12 03	30 53·3	31 29·1	33 1·6	+7·2	+9·0	+7·7
41 F	918	Mandvi (Cutch) ...	22 49 30	69 22 0	20	12 12 05	30 20·3	30 42·8	32 15·8	+7·3	+9·0	+7·8
	925	Salāya ...	22 18 10	69 36 20	30	23 1 06	29 59·9	30 21·2	31 54·2	+7·3	+9·0	+7·8
41 G	IX	PORBANDAR ...	21 37 43	69 36 39	30	26 12 19	30 15·4	28 41·9	30 15·5	+7·4	+9·1	+7·8
41 I	922	Lodrāni ...	23 53 50	70 37 30	100	4 1 06	32 10·6	32 31·9	34 1·1	+7·0	+8·7	+7·4
	921	Trangeribet ...	23 51 20	70 4 20	10	28 12 05	32 43·5	33 4·5	34 34·8	+7·0	+8·8	+7·5
	16 (*a*)	Ādesar ...	23 33 30	70 59 10	70	17 12 03	31 33·5	32 8·1	33 37·3	+7·0	+8·7	+7·4
	15 (*a*)	Lākadiya ...	23 20 30	70 34 40	200	14 12 03	31 28·8	32 4·1	33 34·4	+7·1	+8·8	+7·5
	14	Bhimasar ...	23 11 20	70 9 50	90	12 12 03	30 30·4	31 5·8	32 37·2	+7·1	+8·9	+7·6
41 J	142 (*a*)	Morvi ...	22 49 20	70 50 50	150	8 3 02	30 32·8	31 21·3	32 51·6	+7·1	+8·8	+7·5
	145	Jāmnagar ...	22 28 30	70 4 20	60	14 3 02	28 54·0	29 43·5	31 15·5	+7·2	+9·0	+7·6
	143	Rājkot ...	22 18 20	70 48 40	400	28 2 10	29 39·5	29 28·3	30 58·6	+7·2	+8·8	+7·5
	924	Kālāvad ...	22 12 20	70 22 50	300	19 1 06	29 37·4	29 59·7	31 31·1	+7·2	+8·9	+7·6
41 K	150	Jām Jodhpur ...	21 54 10	70 1 50	300	29 3 02	27 43·6	28 32·4	30 4·9	+7·3	+9·0	+7·7
	144	Virpur ...	21 51 0	70 42 20	400	11 3 02	28 15·8	29 5·0	30 35·9	+7·2	+8·9	+7·5
	146	Junagad ...	21 31 50	70 27 0	200	17 3 02	27 15·6	28 5·1	29 37·1	+7·3	+9·0	+7·6
	927	Gigasaran ...	21 17 0	70 57 10	800	6 2 06	27 25·4	27 46·4	29 17·3	+7·2	+8·9	+7·5
41 L	147	Verāval ...	20 54 20	7 22 30	70	13 1 13	27 17·0	26 40·9	28 12·9	+7·3	+9·0	+7·6
41 M	17	Vārāhi ...	23 47 50	71 26 20	40	19 12 03	31 54·7	32 29·2	33 57·3	+6·9	+8·6	+7·3
	140 (*a*)	Dhrāngadhra ...	23 0 0	71 28 40	150	4 3 02	29 47·7	30 35·5	32 3·6	+7·0	+8·6	+7·3
41 N	138 (*a*)	Limbdi ...	22 34 0	71 48 0	150	27 2 02	29 6·6	29 54·3	31 22·4	+7·0	+8·6	+7·3
	141	Dolia ...	22 31 20	71 21 50	400	6 3 02	29 31·8	30 20·3	31 49·5	+7·1	+8·7	+7·4
	137	Ningāla ...	22 1 30	71 42 20	200	25 2 02	28 18·1	29 7·3	30 36·0	+7·1	+8·7	+7·3
41 O	149	Chital ...	21 44 40	71 12 40	500	27 3 02	27 48·1	28 35·7	30 5·5	+7·1	+8·8	+7·4
	928	Ghoba ...	21 25 40	71 34 20	200	11 2 06	27 47·4	28 8·2	29 36·9	+7·1	+8·7	+7·3
	690	Mahuva Bandar ...	21 2 20	71 46 30	50	13 4 05	26 28·5	26 54·5	28 23·2	+7·1	+8·7	+7·3
41 P	691	Jāfarābād ...	20 51 50	71 22 10	50	15 4 05	26 46·1	27 13·2	28 43·0	+7·2	+8·8	+7·4
43 B	86	Rashkai ...	34 7 0	72 1 20	980	22 3 02	48 34·9	49 11·8	50 33·0	+5·6	+7·7	+7·0
43 C	85	Khairābād ...	33 54 10	72 13 10	990	21 11 12	49 7·6	48 37·1	49 58·3	+5·7	+7·7	+7·0
	84	Sarai Kāla ...	33 44 40	72 49 10	1690	18 3 02	47 59·8	48 37·1	49 57·8	+5·6	+7·7	+6·9
	90	Fatehjang ...	33 34 20	72 38 30	1700	31 3 02	47 39·7	48 16·8	49 37·5	+5·7	+7·7	+6·9

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES		
										1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
43 C	89	Jand ...	33 26 20	72 0 50	1170	25 11 12	48 38·8	48 8·0	49 29·8	+5·7	+7·8	+7·0
43 D	319	Chakwāl ...	32 56 10	72 51 10	1710	30 4 03	47 6·1	47 38·6	48 59·9	+5·8	+7·8	+6·9
	318	Talagang ...	32 55 50	72 25 0	1500	25 4 03	47 15·7	47 49·5	49 11·3	+5·8	+7·8	+7·0
	94	Lilla ...	32 33 0	72 44 40	670	11 4 02	46 51·7	47 28·4	48 50·2	+5·8	+7·8	+7·0
	96	Bhera ...	32 29 20	72 55 20	600	15 4 02	46 18·0	46 55·4	48 17·2	+5·8	+7·8	+7·0
	93(*a*)	Hadāli ...	32 18 40	72 10 10	610	9 4 02	46 7·2	46 46·0	48 8·4	+5·9	+7·9	+7·0
	1399	Sargodha ...	32 6 0	72 38 30	610	1 12 12	46 47·8	46 16·6	47 39·0	+5·9	+7·9	+7·0
43 F	1342	Muzaffarābād ...	34 22 10	73 27 40	2400	5 4 11	49 44·5	49 27·7	50 46·7	+5·5	+7·5	+6·8
43 G	1341	Murree ...	33 55 10	73 23 20	6300	30 3 11	49 5·7	48 48·2	50 8·3	+5·5	+7·6	+6·9
	V	RAWALPINDI ...	33 35 25	73 3 6	1700	23 11 19	49 38·3	48 18·3	49 39·0	+5·6	+7·7	+6·9
	83	Mankiala ...	33 29 0	73 14 40	1760	15 3 02	47 32·5	48 10·9	49 31·6	+5·6	+7·7	+6·9
	1340	Behari ...	33 23 20	73 43 50	1660	21 3 11	48 22·9	48 5·7	49 25·8	+5·6	+7·6	+6·9
	82	Domeli ...	33 2 0	73 28 0	1190	13 3 02	46 59·0	47 38·3	48 59·0	+5·7	+7·7	+6·9
43 H	81	Lāla Mūsa ...	32 42 40	73 57 0	830	15 11 12	47 49·5	47 19·6	48 40·3	+5·7	+7·7	+6·9
	95	Khewra ...	32 38 0	73 0 10	800	29 11 12	48 0·2	47 29·2	48 51·0	+5·8	+7·8	+7·0
	97	Hariah ...	32 34 30	73 19 30	750	17 4 02	46 35·9	47 13·4	48 34·7	+5·8	+7·8	+6·9
43 J	1345	Gurais ...	34 38 0	74 51 50	7940	27 4 11	50 14·3	49 56·7	51 14·0	+5·3	+7·3	+6·7
	1344	Shalura ...	34 29 30	74 7 40	5900	17 4 11	49 57·8	49 41·4	50 59·8	+5·4	+7·4	+6·8
	1343	Uri ...	34 5 0	74 2 50	4450	11 4 11	49 18·1	49 1·3	50 20·3	+5·4	+7·5	+6·8
	1256(*a*)	Srīnagar ...	34 3 50	74 50 30	5200	13 5 11	49 27·0	49 10·0	50 27·9	+5·4	+7·4	+6·7
43 K	1346	Hirpur ...	33 40 50	74 43 0	7540	19 5 11	48 56·3	48 38·2	49 57·2	+5·4	+7·5	+6·8
	1354	Thana Mandi ...	33 32 40	74 22 0	4930	24 6 11	48 13·1	47 52·9	49 11·9	+5·5	+7·5	+6·8
	1355	Changassarai ...	33 14 40	74 15 50	2350	28 6 11	48 22·2	48 3·6	49 23·2	+5·5	+7·6	+6·8
	1353	Poni ...	33 4 50	74 41 50	2000	18 6 11	47 44·4	47 26·0	48 45·0	+5·5	+7·5	+6·8
43 L	1356	Bhimbar ...	32 58 20	74 4 50	1100	2 7 11	47 50·6	47 30·7	48 50·3	+5·6	+7·6	+6·8
	80	Jammu ...	32 43 0	74 51 20	1000	8 3 02	46 24·2	47 1·0	48 20·0	+5·5	+7·5	+6·8
	79	Sambriāl ...	32 28 10	74 21 20	800	6 3 02	46 15·4	46 52·8	48 12·4	+5·6	+7·6	+6·8
	1339	Dhoda ...	32 9 50	74 41 50	800	6 3 11	46 44·4	46 27·4	47 47·0	+5·6	+7·6	+6·8
	78	Gujrānwāla ...	32 9 40	74 12 0	750	4 3 02	45 53·6	46 32·4	47 53·1	+5·7	+7·7	+6·9
43 N	1257(*a*)	Sonamarg ...	34 18 30	75 18 30	8750	8 5 11	49 43·4	49 25·5	50 42·8	+5·3	+7·3	+6·7
43 O	1348	Inshin ...	33 48 30	75 33 40	8000	27 5 11	49 7·4	48 50·7	50 8·0	+5·3	+7·3	+6·7
	1347	Islāmābād ...	33 43 50	75 8 50	5240	22 5 11	48 57·8	48 40·7	49 58·6	+5·4	+7·4	+6·7
	1349	Sof ...	33 37 0	75 17 40	6200	30 5 11	48 46·4	48 28·5	49 46·4	+5·4	+7·4	+6·7
	1350	Banihal ...	33 26 20	75 12 0	5500	2 6 11	48 38·1	48 20·2	49 38·1	+5·4	+7·4	+6·7
	1351	Ramban ...	33 13 30	75 14 40	2000	8 6 11	48 13·2	47 55·5	49 13·4	+5·4	+7·4	+6·7
43 P	1352	Udampur ...	32 55 20	75 7 30	2400	12 6 11	47 51·5	47 32·7	48 51·7	+5·5	+7·5	+6·8
	100	Pathānkot ...	32 16 30	75 38 40	1080	13 11 12	47 6·5	46 37·3	47 55·8	+5·5	+7·5	+6·7
44 A	1400	Sillanwali ...	31 49 35	72 30 40	600	3 12 12	46 26·3	45 55·1	47 17·5	+6·0	+7·9	+7·0
	320	Khair Kulan ...	31 46 50	72 11 0	570	6 5 03	45 33·4	46 7·6	47 31·1	+6·0	+8·0	+7·1
	1401	Jhang (Maghiāna) ...	31 15 30	72 19 30	510	5 12 12	45 24·0	44 52·4	46 15·9	+6·1	+8·0	+7·1
	321	Athārānhazāri ...	31 10 30	72 5 40	480	10 5 03	44 23·4	44 57·6	46 21·7	+6·1	+8·1	+7·1
	369	Gojra ...	31 8 39	72 40 30	500	26 4 03	44 13·1	44 47·3	46 10·3	+6·0	+8·0	+7·0
44 B	370	Darkhana ...	30 39 50	72 11 10	460	29 4 03	43 33·8	44 8·6	45 32·7	+6·1	+8·1	+7·1
	74	Chīchawatni ...	30 32 10	72 41 50	550	22 2 02	43 19·5	44 1·6	45 25·7	+6·1	+8·1	+7·1
	75	Kacha Khuh ...	30 22 40	72 9 10	450	24 2 02	43 3·8	43 46·6	45 11·3	+6·2	+8·2	+7·1
44 C	61	Bakhshan Khan ...	29 44 30	72 42 50	480	20 1 02	42 2·1	42 45·5	44 9·6	+6·2	+8·1	+7·1
	60	Asrani ...	29 31 30	72 8 10	460	18 1 02	41 55·7	42 30·8	44 4·5	+6·3	+8·2	+7·1
	239	Mojgarh ...	29 0 50	72 8 20	400	2 12 02	40 47·7	41 26·1	42 50·8	+6·3	+8·2	+7·1
44 D	238	Ranabhana Toba ...	28 54 31	72 38 10	450	29 11 02	41 6·4	41 44·8	43 8·4	+6·3	+8·1	+7·0
	240	Kumhāriwala ...	28 31 57	72 14 10	420	4 12 02	41 15·5	41 53·9	43 18·6	+6·3	+8·2	+7·1
	250	Pungāl ...	28 30 50	72 48 40	500	11 1 03	40 9·4	40 47·2	42 10·8	+6·3	+8·1	+7·0
	251	Angnao ...	28 6 0	72 47 0	600	14 1 03	39 33·3	40 11·3	41 34·9	+6·3	+8·1	+7·0
	23	Ranjitpura ...	28 1 0	72 7 20	480	19 2 02	39 8·9	39 53·2	41 18·5	+6·4	+8·3	+7·1
44 E	367	Kaleke ...	31 58 20	73 36 20	700	23 4 03	45 39·0	46 12·1	47 33·4	+5·8	+7·8	+6·9
	368	Chiniot Road ...	31 34 20	73 10 40	600	25 4 03	44 54·3	45 27·9	46 50·3	+5·9	+7·9	+7·0
	72	Chānga Mānga ...	31 5 30	73 56 30	650	19 2 02	44 3·6	44 44·3	46 5·6	+5·9	+7·8	+6·9
44 F	73	Gāmbar ...	30 45 19	73 19 50	600	21 2 02	43 39·5	44 20·9	45 43 3	+6·0	+7·9	+7·0
	63 (*a*)	Orki (Sujawalpur) ...	30 8 40	73 54 30	600	27 1 02	42 39·1	43 20·5	44 42·4	+6·0	+7·9	+6·9
	62	Rojhanwāli ...	30 0 50	73 15 40	500	12 4 10	43 16 6	43 5·3	44 28·3	+6·1	+8·0	+7·0
44 G	246	Ganeshgarh ...	29 45 0	73 54 0	600	28 12 02	42 10·6	42 46·6	44 8·5	+6·0	+7·9	+6·9
	247	Lalgarh ...	29 38 21	73 22 50	530	30 12 02	41 59·0	42 35·6	43 58·6	+6·1	+8·0	+7·0
	127	Sūratgarh ...	29 19 30	73 54 30	560	31 12 12	42 38·4	42 6·4	43 28·3	+6·1	+7·9	+6·9
	237	Walar ...	29 15 30	73 1 40	500	25 11 02	41 23·1	42 0·9	43 24·5	+6·2	+8·1	+7·0
	236	Balochia ...	29 14 50	73 27 20	550	22 11 02	41 17·7	41 54·9	43 17·9	+6·1	+8·0	+7·0

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation.	Value corrected to date.	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
44 H	248	Gegra ...	28 49 10	73 15 0	600	5 1 03	40 33·1	41 10·3	42 33·3	+6·2	+8·0	+7·0
	126	Mahajan ...	28 47 40	73 50 40	640	25 1 02	40 28·9	41 11·0	42 32·9	+6·1	+7·9	+6·9
	249	Kālasar ...	28 28 0	73 15 20	700	7 1 03	40 14·3	40 51·5	42 14·5	+6·2	+8·0	+7·0
	125	Dulmera ...	28 24 20	73 39 20	660	23 1 02	39 56·0	40 38·8	42 0·7	+6·2	+7·9	+6·9
	XXIX	BĪKANER ...	28 0 40	73 18 50	750	30 1 20	41 22·7	39 59·6	41 22·1	+6·3	+8·0	+6·9
44 I	98	Amritsar ...	31 38 10	74 51 30	750	11 4 08	45 32·5	45 37·0	46 56·6	+5·7	+7·6	+6·8
	XXV	LAHORE ...	31 35 50	74 18 50	700	19 11 19	47 15·1	45 55·2	47 15·9	+5·8	+7·7	+6·9
44 J	434	Ferozepore ...	30 57 52	74 36 10	650	19 4 04	44 27·8	44 55·1	46 15·3	+5·8	+7·7	+6·8
	64	Malout ...	30 11 0	74 29 40	650	10 11 02	42 48·2	43 24·2	44 45·5	+5·9	+7·8	+6·9
44 K	235	Sangaria ...	29 47 50	74 27 40	620	17 11 02	42 13·6	42 50·2	44 11·0	+6·0	+7·8	+6·8
	267	Mirjawali ...	29 20 40	74 30 20	600	1 3 03	41 32·3	42 7·1	43 27·9	+6·0	+7·8	+6·8
44 L	266	Saringsar ...	28 54 40	74 28 30	700	26 2 03	40 51·4	41 27·4	42 48·2	+6·1	+7·8	+6·8
	265	Sardārshahr ...	28 26 10	74 28 50	900	23 2 03	40 3·4	40 39·4	42 0·2	+6·1	+7·8	+6·8
	271	Fatehpur ...	28 0 30	74 57 20	1100	13 3 03	39 36·1	40 11·7	41 31·4	+6·1	+7·7	+6·7
44 M	99	Dhārīwal ...	31 57 10	75 18 50	850	23 4 02	45 44·6	46 22·1	47 41·7	+5·6	+7·6	+6·8
	1803	Hoshiārpur ...	31 31 50	75 54 20	1100	8 4 10	45 30·7	45 21·3	46 39·8	+5·5	+7·5	+6·7
	70	Kartārpur ...	31 26 10	75 29 30	780	12 2 02	44 47·1	45 25·7	46 44·8	+5·6	+7·6	+6·7
44 N	69	Ladhowāl ...	30 59 0	75 47 20	800	24 4 04	44 18·9	44 45·2	46 4·3	+5·6	+7·6	+6·7
	435	Moga ...	30 49 40	75 10 30	720	22 4 04	44 2·4	44 29·2	45 49·4	+5·7	+7·7	+6·8
	66	Alāl ..	30 21 46	75 43 50	750	1 2 02	43 11·1	43 50·4	45 9·5	+5·7	+7·6	+6·7
	65	Bhuchchu ...	30 12 47	75 5 30	700	31 1 02	42 51·1	43 31·1	44 51·3	+5·8	+7·7	+6·8
44 O	284	Budhlāda ...	29 55 30	75 33 20	750	16 4 03	42 27·3	43 0·4	44 19·5	+5·8	+7·6	+6·7
	XLIII	SIRSA ...	29 32 10	75 2 40	700	25 1 20	43 45·7	42 25·0	43 45·2	+5·9	+7·7	+6·8
	282	Adampur ...	29 17 20	75 27 50	700	12 4 03	41 31·3	42 4·9	43 24·0	+5·9	+7·6	+6·7
	281	Hānsi ...	29 5 40	75 57 0	700	9 4 03	41 11·2	41 44·3	43 2·3	+5·8	+7·5	+6·6
44 P	268	Malsisar ...	28 58 20	75 1 30	700	4 3 03	40 56·1	41 30·9	42 50·6	+6·0	+7·7	+6·7
	269	Sūrpura ...	28 40 17	75 37 0	750	7 3 03	40 31·2	41 5·4	42 24·0	+5·9	+7·6	+6·6
	270	Tamkor ..	28 26 20	75 15 10	900	9 3 03	40 1·4	40 36·2	41 55·3	+6·0	+7·6	+6·7
	275	Koharwas ...	28 15 40	75 57 30	1000	25 3 03	39 38·1	40 11·7	41 29·2	+5·9	+7·5	+6·5
45 A	252	Hodda ...	27 37 50	72 52 30	900	17 1 03	38 49·8	39 28·1	40 51·2	+6·4	+8·1	+6·9
	22	Nokh ...	27 33 30	72 15 20	580	15 2 02	38 24·6	39 8·9	40 33·1	+6·4	+8·2	+7·0
	253	Ranisar ...	27 12 40	72 42 40	880	20 1 03	37 57·0	38 35·5	39 59·1	+6·4	+8·1	+7·0
	21 (*a*)	Phalodi ...	27 7 30	72 21 20	790	24 1 09	38 14·6	38 13·9	39 38·1	+6·5	+8·2	+7·0
45 B	20	Asolai ...	26 42 10	72 15 50	900	28 11 08	37 47·4	37 48·0	39 12·2	+6·5	+8·2	+7·0
	255	Khethasar ...	26 41 0	72 49 20	900	26 1 03	37 7·8	37 45·4	39 8·5	+6·5	+8·1	+6·9
	19 (*a*)	Sai ...	26 16 50	72 16 20	850	4 2 02	35 23·4	36 9·0	37 33·2	+6·6	+8·2	+7·0
45 C	258	Dundāra ...	25 53 40	72 47 50	540	2 2 03	35 46·0	36 24·5	37 47·6	+6·5	+8·1	+6·9
	259	Bālotra ...	25 50 10	72 14 40	360	4 2 03	36 40·9	37 19·8	38 44·0	+6·6	+8·2	+7·0
	405	Jalar ...	25 21 10	72 36 50	530	31 12 03	34 42·0	35 14·2	36 38·4	+6·6	+8·2	+7·0
45 D	404	Lohana ...	24 47 20	72 27 10	900	28 12 03	33 40·0	34 12·9	35 37·7	+6·7	+8·3	+7·0
	148	Abu Road ...	24 29 0	72 46 40	860	4 3 10	33 50·2	33 39·3	35 3·5	+6·7	+8·2	+7·0
	118	Roho ...	24 24 20	72 38 20	740	6 1 02	32 36·6	33 23·6	34 48·4	+6·7	+8·3	+7·0
	117	Deesa ...	24 14 30	72 10 40	450	4 1 02	32 31·8	33 19·5	34 45·4	+6·8	+8·4	+7·1
45 E	123	Bikasar ...	27 34 20	73 28 0	1040	17 1 02	38 26·3	39 10·5	40 33·0	+6·3	+8·0	+6·9
	254	Panchora ...	27 6 40	73 13 30	1100	22 1 03	37 58·5	38 36·3	39 58·8	+6·4	+8·0	+6·9
	122	Mūndwa ...	27 3 50	73 48 30	1090	16 1 02	37 37·7	38 21·9	39 43·3	+6·3	+7·9	+6·8
45 F	121	Khāngta ...	26 33 30	73 37 20	980	27 12 12	38 1·7	37 30·2	38 51·6	+6·4	+7·9	+6·8
	256	Jodhpur ...	26 16 20	73 1 30	780	29 1 03	36 21·5	36 58·8	38 21·3	+6·5	+8·0	+6·9
45 G	132	Sojat Road ...	25 52 0	73 45 10	1000	8 2 02	35 27·2	36 11·0	37 32·4	+6·4	+7·9	+6·8
	257	Marwar Pāli ...	25 47 50	73 19 30	720	31 1 03	35 31·8	36 10·1	37 32·1	+6·5	+8·0	+6·8
	120	Rāni ...	25 21 10	73 18 20	920	10 1 02	34 29·2	35 14·8	36 36·8	+6·5	+8·0	+6·8
	633	Lāwa ...	25 14 10	73 59 30	1800	25 2 05	35 2·7	35 26·1	36 47·0	+6·5	+7·9	+6·7
45 H	119(*a*)	Pindwāra ...	24 48 0	73 2 10	1220	3 1 13	34 52·2	34 19·7	35 42·8	+6·6	+8·1	+6·9
	I	UDAIPUR ...	24 34 42	73 42 46	1900	10 2 20	35 17·7	33 55·0	35 17·0	+6·6	+8·0	+6·8
	634	Bichabhera ...	24 16 20	73 22 50	1650	4 3 05	33 7·3	33 33·0	34 56·1	+6·6	+8·1	+6·9
45 I	264	Bana ...	27 58 40	74 1 50	990	20 2 03	39 16·2	39 52·9	41 14·3	+6·2	+7·9	+6·8
	272	Singrawat ...	27 26 10	74 52 50	1300	16 3 03	38 26·6	39 2·2	40 21·4	+6·2	+7·7	+6·6
	263	Dugoli ...	27 22 0	74 10 20	1000	17 2 03	38 15·8	38 52·0	40 12·3	+6·2	+7·8	+6·7
45 J	128	Gachhipura ...	26 57 20	74 27 50	1100	29 1 02	37 23·8	38 6·4	39 26·7	+6·2	+7·8	+6·7
	XXX	AJMER ...	26 27 30	74 38 30	1600	5 2 20	38 37·9	37 18·0	38 37·2	+6·3	+7·7	+6·6
	131(*a*)	Beāwar ...	26 26 40	74 18 30	1400	6 2 02	35 51·1	36 34·4	37 54·7	+6·3	+7·8	+6·7
45 K	160	Māndal ...	25 26 50	74 35 10	1450	16 4 02	34 20·2	35 13·5	36 33·3	+6·4	+7·8	+6·6

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
45 L	159	Kapasin ...	24 51 30	74 18 40	1500	15 4 02	33 45·8	34 27·3	35 47·6	+6·5	+7·8	+6·7
	158	Nimbahera ...	24 37 20	74 41 40	1500	8 3 09	34 29·9	34 28·8	35 48·6	+6·4	+7·8	+6·6
	640	Kānor ...	24 26 0	74 16 10	1630	25 3 05	33 19·6	33 45·0	35 5·9	+6·5	+7·9	+6·7
45M	274	Gūdha ...	27 51 40	75 31 40	1700	23 3 03	38 59·2	39 33·8	40 52·4	+6·0	+7·6	+6·6
	277	Shahpura ...	27 23 30	75 58 0	1700	31 3 03	38 16·5	38 50·8	40 7·8	+6·0	+7·5	+6·4
	278	Khatu ...	27 22 10	75 24 10	1500	19 3 03	38 5·4	38 40·4	39 58·5	+6·1	+7·6	+6·5
45 N	162	Jaipur ...	26 55 0	75 47 0	1300	17 2 13	38 55·4	38 24·5	39 41·5	+6·1	+7·5	+6·4
	129	Sāmbhar ...	26 54 20	75 11 10	1200	31 1 02	37 51·9	38 34·9	39 53·0	+6·2	+7·6	+6·5
	161	Naraina ...	26 47 30	75 11 50	1200	19 4 02	37 45·0	38 26·2	39 44·3	+6·2	+7·6	+6·5
	608	Jhalāi ...	26 21 30	75 59 50	1000	23 11 04	36 33·4	36 58·3	38 15·3	+6·1	+7·5	+6·4
	609	Mālpura ...	26 17 0	75 22 10	1100	26 11 04	36 39·8	37 5·1	38 23·2	+6·2	+7·6	+6·5
45 O	610	Awan ...	25 48 0	75 36 20	1050	29 11 04	35 52·8	36 18·1	37 35·1	+6·2	+7·5	+6·4
	612	Kotah ...	25 11 30	75 51 40	860	5 4 10	35 36·2	35 26·6	36 43·6	+6·2	+7·5	+6·4
45 P	613	Singoli ...	24 58 10	75 17 20	1200	10 12 04	34 37·4	35 3·1	36 21·2	+6·3	+7·6	+6·5
	614	Rāmpura ...	24 27 40	75 26 40	1400	13 12 04	33 19·8	33 45·4	35 3·5	+6·3	+7·6	+6·5
	157	(Panth) Pīplia .	24 12 20	75 0 40	1500	16 2 09	32 27·8	32 26·0	33 45·6	+6·4	+7·7	+6·5
	616	Kundio ...	24 2 0	75 53 30	1600	20 12 04	32 24·5	32 48·6	34 5·6	+6·3	+7·5	+6·4
46 A	116(*a*)	Kherālu ...	23 52 40	72 37 20	550	2 1 02	31 40·7	32 27·0	33 51·8	+6·8	+8·3	+7·0
	115	Pātan ...	23 51 0	72 8 10	260	26 12 01	31 49·8	32 37·4	34 3·3	+6·8	+8·4	+7·1
	114	Jagudan ...	23 30 50	72 24 0	290	4 1 13	32 39·1	32 5·4	33 31·8	+6·8	+8·4	+7·1
	113	Parāntīj ...	23 25 40	72 51 50	370	21 12 01	31 6·3	31 53·7	33 18·5	+6·8	+8·3	+7·0
	XXXII	VIRAMGĀM ...	23 8 10	72 3 30	90	23 12 19	32 41·7	31 14·9	32 41·9	+6·9	+8·5	+7·2
46 B	112	Bārejadi ...	22 53 40	72 40 20	120	20 12 01	30 12·5	31 0·0	32 25·4	+6·8	+8·4	+7·0
	111	Cambay ...	22 19 20	72 38 0	40	17 12 01	28 58·3	29 46·5	31 12·4	+6·9	+8·4	+7·1
46 C	136	Bhāvnagar ...	21 46 40	72 7 40	20	15 1 13	28 33·5	27 59·1	29 26·7	+7·0	+8·6	+7·2
	XXVIII	SACHIN ...	21 4 40	72 52 40	40	30 12 19	28 48·4	27 22·4	28 48·4	+6·9	+8·5	+7·0
46 D	104	Pārdi ...	20 31 0	72 55 40	50	30 11 01	25 37·8	26 26·6	27 52·6	+6·9	+8·5	+7·0
46 E	635	Dhandolia ...	23 42 10	73 19 50	700	8 3 05	32 9·8	32 35·7	33 59·4	+6·7	+8·2	+6·9
	637	Ghatanogam ...	23 35 30	73 53 50	600	14 3 05	31 48·3	32 13·9	33 35·9	+6·6	+8·0	+6·8
	636	Debhari ...	23 15 20	73 30 10	360	11 3 05	31 3·8	31 29·7	32 52·9	+6·7	+8·2	+6·8
46 F	153	Chanchēlāo ...	22 47 50	73 42 40	500	4 4 02	30 3·2	30 48·4	32 11·0	+6·7	+8·1	+6·8
	152	Dākor ...	22 45 10	73 9 10	170	3 4 02	29 41·9	30 27·8	31 52·1	+6·8	+8·3	+6·9
	109	Bodeli ...	22 16 20	73 42 50	250	13 12 01	29 23·4	30 10·9	31 34·1	+6·7	+8·2	+6·8
	110	Itola ...	22 9 10	73 9 40	90	17 1 13	30 2·3	29 28·4	30 52·7	+6·8	+8·3	+6·9
	626	Artia ...	22 2 40	73 58 20	900	26 1 05	30 9·7	30 35·3	31 57·4	+6·7	+8·1	+6·7
46 G	108	Nāndod ...	21 53 20	73 28 30	150	10 12 01	28 8·3	28 56·8	30 21·1	+6·8	+8·3	+6·9
	107(*a*)	Anklesvar ...	21 37 30	73 0 30	60	9 12 01	27 52·4	28 40·6	30 6·0	+6·8	+8·4	+7·0
	106	Fort Songhad ...	21 8 50	73 33 30	400	4 12 01	26 44·9	27 33·1	28 56·9	+6·8	+8·3	+6·8
46H	630	Baphlun ...	20 32 50	73 29 30	1700	12 2 05	25 40·6	26 5·5	27 29·8	+6·8	+8·3	+6·9
	631	Kanāsi ...	20 31 30	73 52 0	2000	15 2 05	25 35·1	26 1·8	27 24·5	+6·7	+8·2	+6·7
	629	Peint ...	20 15 20	73 29 10	1900	9 2 05	25 28·1	25 54·5	27 19·4	+6·8	+8·4	+6·9
	628	Girdan ...	20 5 20	73 25 50	1200	6 2 05	26 7·0	26 33·8	27 58·7	+6·8	+8·4	+6·9
	224	Khervādi ...	20 2 50	73 58 10	1810	20 4 03	25 10·4	25 45·9	27 8·6	+6·7	+8·2	+6·7
46 I	639	Mānpur ...	23 59 50	74 14 40	630	20 3 05	32 43·5	33 8·7	34 29·6	+6·5	+7·9	+6·7
	638	Bānswāra ...	23 33 10	74 25 50	780	17 3 05	31 43·0	32 8·3	33 28·7	+6·5	+7·9	+6·6
	155	Bhairongarh ...	23 9 0	74 46 40	1250	8 4 02	30 23·2	31 7·1	32 26·9	+6·5	+7·8	+6·6
46 J	154	Dohad ...	22 50 20	74 14 50	1000	7 4 02	30 0·2	30 44·1	32 5·6	+6·6	+8·0	+6·7
	625	Sondwa ...	22 7 10	74 22 20	500	23 1 05	28 15·8	28 41·6	30 2·6	+6·6	+8·0	+6·6
	624	Chikalda ...	22 5 0	74 52 40	460	20 1 05	28 42·7	29 8·9	30 28·8	+6·5	+7·9	+6·5
46K	554	Nandurbār ...	21 22 30	74 14 40	750	19 12 03	27 45·3	28 18·1	29 40·2	+6·6	+8·1	+6·7
	553	Sindkheda ...	21 14 13	74 44 20	560	17 12 03	26 49·6	27 22·4	28 42·3	+6·6	+7·9	+6·5
46 L	226	Dhūlia ...	20 53 10	74 46 20	850	24 4 03	25 59·4	26 35·4	27 55·3	+6·6	+7·9	+6·5
	632	Jaykhera ...	20 47 40	74 12 10	2000	18 2 05	26 23·9	26 50·6	28 12·7	+6·7	+8·1	+6·7
	XLI	MANMĀD ...	20 14 40	74 26 20	1900	10 1 20	26 42·9	25 21·7	26 42·7	+6·6	+8·0	+6·6
46M	1327	Alot ...	23 45 30	75 32 40	1500	2 4 10	33 2·1	32 51·4	34 9·0	+6·3	+7·6	+6·4
	156	Jaorā ...	23 38 0	75 7 0	1500	7 2 13	32 54·0	32 22·3	33 41·0	+6·4	+7·7	+6·5
	558	Barnagar ...	23 3 50	75 22 30	1600	3 1 04	31 15·0	31 47·3	33 5·5	+6·4	+7·7	+6·4
46N	LVI	INDORE ...	22 42 8	75 52 40	1800	12 2 20	31 57·8	30 40·6	31 57·1	+6·3	+7·5	+6·3
	623	Dhār ...	22 36 0	75 18 30	1930	5 12 08	30 2·3	30 3·1	31 21·3	+6·4	+7·7	+6·4
	622	Khal Ghat ...	22 8 50	75 27 10	500	18 1 09	33 11·1	33 10·5	34 28·7	+6·4	+7·7	+6·4
46 O	621	Bistān ...	21 41 50	75 40 10	1040	11 3 09	27 53·6	27 52·1	29 9·7	+6·4	+7·6	+6·4
	929	Sendhwa ...	21 40 50	75 5 20	1330	19 2 06	28 31·2	28 50·3	30 9·6	+6·5	+7·8	+6·5
	XVI	BHUSAWAL ...	21 3 40	75 47 0	650	13 1 20	28 27·3	27 10·0	28 27·1	+6·4	+7·6	+6·3

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES		
										1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
46 O	555	Jālgaon ...	21 1 20	75 33 40	670	21 12 03	26 43·8	27 15·6	28 33·8	+6·4	+7·7	+6·4
46 P	227	Chalisgaon ...	20 27 30	75 1 0	1140	26 4 03	25 1·1	25 37·5	26 56·3	+6·5	+7·8	+6·4
	1161	Sillod ...	20 18 40	75 38 50	2000	15 11 07	25 20·7	25 27·7	26 45·4	+6·4	+7·7	+6·3
47 A	103	Dāhānu Road ...	19 58 40	72 44 40	30	21 1 13	25 30·2	24 55·0	26 22·1	+7·0	+8·6	+7·1
	102	Virār ...	19 27 10	72 48 30	20	26 11 01	23 37·4	24 27·1	25 54·2	+7·0	+8·6	+7·1
47 B		**ALIBAG OBSY.** ...	18 38 17	72 52 26	20			23 26·0	24 53·3	+7·0	+8·6	+7·1
	689	Revadanda ...	18 32 20	72 57 0	0	20 11 09	22 44·2	22 36·6	24 3·2	+7·0	+8·6	+7·0
47 E	627	Jawhār ...	19 54 0	73 13 30	1520	2 1 05	24 49·6	25 16·5	26 42·0	+6·9	+8·5	+6·9
	225	Igatpuri ...	19 41 20	73 34 40	1920	22 4 03	23 59·6	24 35·8	26 0·2	+6·8	+8·4	+6·8
	169	Kalyān ...	19 15 0	73 8 20	30	15 1 10	25 19·1	25 10·0	26 36·0	+6·9	+8·5	+7·0
	1322	Narayangaon ...	19 6 40	73 58 10	2130	26 1 10	23 53·5	23 44·6	25 7·9	+6·8	+8·3	+6·7
	1320	Ghoda ...	19 3 10	73 49 50	2100	22 1 10	23 20·6	23 11·7	24 35·0	+6·8	+8·3	+6·7
	648	Manchar ...	19 0 30	73 56 40	2100	20 1 10	22 30·2	22 21·4	23 44·1	+6·8	+8·2	+6·7
47 F	1319	Khed ...	18 51 30	73 53 20	2000	18 1 10	23 38·0	23 29·1	24 52·4	+6·8	+8·3	+6·7
	170 (*a*)	Lonāvla ...	18 44 40	73 23 40	2000	5 2 14	23 31·3	22 48·1	24 13·6	+6·9	+8·5	+6·9
	171 (*a*)	Kirkee ...	18 33 30	73 50 0	1840	28 12 13	23 18·5	22 36·5	23 59·8	+6·8	+8·3	+6·7
47 G	688	Bānkot ...	17 58 20	73 2 30	30	23 11 09	22 1·2	21 53·5	23 19·0	+7·0	+8·5	+6·9
	436	Mahābaleshwar ...	17 55 50	73 39 40	4560	9 11 03	20 32·0	21 6·9	22 29·7	+6·8	+8·3	+6·6
	687	Dābhol ...	17 35 20	73 10 0	0	26 11 09	19 48 7	19 40·9	21 5·9	+7·0	+8·5	+6·8
	437	Helwak ...	17 22 20	73 43 10	2500	13 11 03	19 7·3	19 40·9	21 2·6	+6·8	+8·2	+6·5
	1313	Jaygad ...	17 17 50	73 13 20	0	27 11 09	20 6·9	19 59·2	21 23·7	+6·9	+8·5	+6·7
47 H	686	Ratnāgiri ...	16 59 10	73 18 50	200	29 11 09	17 35·7	17 28·2	18 51·6	+6·9	+8·4	+6·6
	438	Amba ...	16 58 20	73 47 50	2500	20 11 03	19 5·4	19 39·7	21 0·9	+6·8	+8·2	+6·4
	1314	Mūsā-Kazi-Bandar ...	16 37 10	73 20 0	200	30 11 09	18 27·5	18 19·8	19 42·1	+6·9	+8·3	+6·5
	439	Dajeepur ...	16 22 40	73 52 40	2500	25 11 03	17 28·9	18 2·7	19 22·8	+6·8	+8·1	+6·3
	685	Devgarh ...	16 21 50	73 21 50	200	3 12 09	18 12·7	18 5·1	19 27·4	+6·9	+8·3	+6·5
	1315	Mālvan ...	16 3 30	73 27 20	0	5 12 09	17 5·7	16 58·1	18 19·9	+6·9	+8·3	+6·4
47 I	371	Ratagaon or (Vaijāpur)	19 56 40	74 45 50	1800	6 11 03	24 55·7	25 30·1	26 50·0	+6·6	+7·9	+6·5
	222	Puntāmba ...	19 45 40	74 37 20	1600	2 2 10	24 43·7	24 34·8	25 55·3	+6·6	+8·0	+6·5
	649	Sangamner ...	19 34 20	74 13 30	1900	29 1 10	24 9·7	23 59·9	25 21·5	+6·7	+8·1	+6·6
	1325	Miri ...	19 17 0	74 58 0	1800	23 2 10	24 0·7	23 51·1	25 10·5	+6·5	+7·9	+6·4
	221	Ahmadnagar ...	19 4 20	74 43 10	2130	25 2 10	23 20·1	23 10·4	24 30·4	+6·6	+8·0	+6·4
	1321	Singwa ...	19 0 0	74 4 20	2000	24 1 10	23 5·3	22 55·7	24 17·9	+6·7	+8·2	+6·6
47 J	XXXIII	DHOND ...	18 28 0	74 35 10	1690	28 11 19	23 27·7	22 8·3	23 28·3	+6·6	+8·0	+6·4
	220	Rajewadi ...	18 23 0	74 8 30	2300	9 1 10	22 38·3	22 29·3	23 50·4	+6·7	+8·1	+6·5
47 K	672	Nāteputa ...	17 54 10	74 45 30	1800	30 1 05	20 30·3	20 54·6	22 13·5	+6·6	+7·9	+6·3
	219	Wathar ...	17 53 20	74 8 10	2500	7 1 10	21 7·8	20 59·2	22 20·3	+6·7	+8·1	+6·5
	673	Kaledhon ...	17 26 0	74 37 40	2400	4 2 05	19 46·8	20 10·7	21 29·6	+6·7	+7·9	+6·3
	218	Karād ...	17 18 40	74 13 10	1900	5 1 10	19 43·9	19 35·5	20 55·5	+6·7	+8·0	+6·4
47 L	XL	MIRĀJ ...	16 49 19	74 38 10	1800	1 12 19	20 38·2	19 20·3	20 38·7	+6·6	+7·9	+6·2
	217	Kolhāpur ...	16 41 50	74 14 10	1850	3 1 10	18 11·2	18 2·0	19 21·5	+6·7	+8·0	+6·3
	215	Gokāk Road ...	16 14 0	74 44 40	2000	30 12 09	17 21·9	17 14·0	18 31·3	+6·6	+7·8	+6·1
47M	373	Jālna ...	19 51 50	75 53 0	1600	14 2 10	25 3·9	24 55·8	26 12·4	+6·4	+7·6	+6·2
	372	Aurangābād ...	19 51 30	75 20 20	1800	12 2 10	25 19·7	25 11·5	26 29·7	+6·5	+7·7	+6·4
	1323	Jamkhed ...	19 39 40	75 39 0	1700	17 2 10	24 21·1	24 12·9	25 30·0	+6·4	+7·6	+6·3
	1324	Paithān ...	19 28 30	75 22 50	1550	19 2 10	24 24·8	24 16·2	25 34·5	+6·5	+7·8	+6·3
	651	Shagad ...	19 22 0	75 42 40	1400	18 11 04	23 24·1	23 50·3	25 7·4	+6·4	+7·6	+6·3
	650	Shevgaon ...	19 21 20	75 14 0	1600	21 2 10	24 19·5	24 10·8	25 29·6	+6·5	+7·8	+6·4
47 N	660	Mīrajgaon ...	18 44 0	75 1 20	1860	21 12 04	21 58·9	22 25·2	23 44·0	+6·6	+7·8	+6·4
	652	Chousalla ...	18 42 50	75 41 40	2100	22 11 04	21 47·4	22 13·2	23 29·8	+6·4	+7·6	+6·2
	173	Jeur ...	18 15 50	75 9 40	1710	2 3 10	21 45·1	21 35·7	22 54·0	+6·5	+7·8	+6·3
	174	Bārsi ...	18 14 30	75 42 20	1800	7 3 10	21 38·6	21 29·8	22 46·4	+6·4	+7·6	+6·2
47 O	671	Pandharpur ...	17 39 40	75 19 30	1600	5 3 10	20 49·9	20 41·0	21 58·2	+6·5	+7·7	+6·2
	670	Jath ...	17 2 40	75 12 0	2200	23 1 05	18 39·0	19 3·0	20 19·7	+6·5	+7·7	+6·1
47 P	661	Bijāpur ...	16 50 0	75 43 20	1950	20 3 10	18 20·2	18 11·6	19 26·6	+6·4	+7·5	+6·0
	669	Jamkhandi ...	16 30 50	75 17 10	1800	19 1 05	17 14·5	17 39·1	18 55·3	+6·5	+7·7	+6·0
	667	Almatti ...	16 21 10	75 53 20	1700	24 3 10	17 42·8	17 34·2	18 48·2	+6·4	+7·5	+5·8
	668	Karkop ...	16 1 10	75 6 0	2100	16 1 05	16 18·9	16 43·5	17 59·7	+6·5	+7·7	+6·0
48 E	684	Vengurla ...	15 51 30	73 37 20	0	7 12 09	16 25·8	16 18·0	17 38·7	+6·9	+8·2	+6·3
	212	Marmagao ...	15 24 20	73 47 20	20	10 12 09	15 31·2	15 23·8	16 43·4	+6·8	+8·1	+6·2
48 I	214	Belgaum ...	15 50 30	74 31 10	2500	28 12 09	16 30·6	16 22·3	17 39·6	+6·7	+7·8	+6·1
	440	Ramghat ...	15 49 40	74 6 20	2700	2 12 03	15 47·4	16 21·4	17 40·4	+6·8	+8·0	+6·2
	213	Castle Rock ...	15 24 0	74 18 50	1700	26 12 09	14 36·9	14 28·6	15 46·5	+6·7	+7·9	+6·1
48 J	441	Yellāpur ...	14 57 40	74 42 30	1800	8 12 03	13 54·0	14 27·2	15 43·0	+6·6	+7·8	+5·8
	683	Karwār ...	14 47 31	74 7 20	10	13 12 09	14 14·8	14 6·7	15 24·7	+6·7	+8·0	+6·0

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
48 J	1318	Tadri ...	14 31 20	74 21 30	0	22 12 09	14 11·1	14 2·8	15 19·2	+6·6	+7·9	+5·8
	682	Kūmta ...	14 26 0	74 24 50	0	20 12 09	12 58·3	12 50·3	14 6·7	+6·6	+7·9	+5·8
	1317	Chundanver ...	14 23 40	74 29 0	100	17 12 09	13 25·5	13 17·4	14 33·2	+6·6	+7·8	+5·8
	1316	Honāvar ...	14 16 40	74 26 30	0	16 12 09	13 1·5	12 52·9	14 8·8	+6·6	+7·9	+5·7
48 K	681	Bhatkal ...	13 59 30	74 32 0	150	15 3 05	9 39·6	10 3·0	11 17·8	+6·6	+7·8	+5·6
	680	Cūndapur ...	13 37 30	74 41 40	0	10 3 05	10 53·6	11 18·8	12 33·1	+6·5	+7·8	+5·5
	679	Udipi ...	13 20 40	74 44 20	200	7 3 05	10 40·8	11 3·9	12 17·7	+6·5	+7·8	+5·4
48 L	678	Mangalore ...	12 52 0	74 49 40	100	4 3 05	9 52·4	10 14·9	11 28·2	+6·4	+7·8	+5·3
	677	Kāsaragod ...	12 30 3	74 59 40	100	1 3 05	10 29·3	10 51·0	12 3·2	+6·3	+7·7	+5·2
48 M	666	Alūr ...	15 49 30	75 39 0	2000	26 3 10	16 40·6	16 31·3	17 45·3	+6 4	+7·5	+5·8
	VIII	DHĀRWĀR ...	15 26 36	75 0 10	2400	4 12 19	16 41·6	15 26·4	16 42 1	+6·6	+7·7	+5·9
	665	Gadag ...	15 25 10	75 38 10	2170	28 3 10	16 2·2	15 53·4	17 6·9	+6·4	+7·5	+5·7
	211	Yalvigi ...	15 1 50	75 25 0	2100	18 3 03	14 4·6	14 39·9	15 53·5	+6·4	+7·6	+5·6
48 N	210	Rānībennur ...	14 37 0	75 38 30	1800	16 3 03	12 59·7	13 36·6	14 49·1	+6·4	+7·5	+5·5
	442	Banavāsi ...	14 32 20	75 1 10	1900	12 12 03	13 2·5	13 34·7	14 48·9	+6·5	+7·7	+5·6
48 O	443	Manvinhala ...	13 59 10	75 6 20	2100	17 12 03	11 46·0	12 18·3	13 32·0	+6·5	+7·7	+5·5
	208	Shimoga ...	13 55 30	75 34 0	2000	12 3 03	11 22·4	11 56·9	13 8·4	+6·3	+7·5	+5·3
	XXXIX	BIRUR ...	13 35 50	75 58 10	2500	7 12 19	12 39·9	11 29·8	12 40·2	+6·2	+7·4	+5 2
	444	Koppa ...	13 31 50	75 19 30	2200	31 12 03	10 38·1	11 9·7	12 21·8	+6·4	+7·6	+5·3
48 P	445	Beltangadi ...	12 59 10	75 17 0	300	17 12 03	9 37·8	10 8·3	11 19·9	+6·3	+7·6	+5·2
	447	Sakleshpur ...	12 56 40	75 47 30	3000	5 1 04	9 14·1	9 44·1	10 54·6	+6·2	+7·5	+5·1
	446	Sullia ...	12 34 20	75 23 20	300	30 12 03	8 39·2	9 9·6	10 20·7	+6·2	+7·6	+5·1
	200	Vottekolli ...	12 7 20	75 50 20	3000	20 2 03	7 37·2	8 12·2	9 21·1	+6·1	+7·4	+4·9
	676	Kuvoy ...	12 5 40	75 11 30	0	26 2 05	8 50·4	9 12·5	10 24·2	+6·2	+7·7	+5·1
49 M	XXXVIII	CANNANORE ...	11 52 30	75 22 0	70	19 12 19	9 29·2	8 18·8	9 29·4	+6·1	+7·6	+5·0
	198	West Hill ...	11 17 10	75 45 20	60	13 2 03	7 36·0	8 11·4	9 19·8	+6·0	+7·4	+4·8
52 B	1258	Mulbekh ...	34 23 2	76 21 29	11000	3 10 09	49 30·4	49 25·5	50 41·7	+5·2	+7·2	+6·6
52 D	1301	Dharmsāla ...	32 12 0	76 19 30	4000	2 4 10	46 47·3	46 37·0	47 54·9	+5 4	+7·4	+6·7
	1300	Pālampur ...	32 7 20	76 32 20	5500	31 3 10	46 41·0	46 31·8	47 49·2	+5·4	+7·4	+6·6
52 F	1260	Pānāmik ...	34 47 0	77 33 40	8500	25 9 09	50 9·4	50 4·3	51 18·8	+5·0	+7·0	+6·5
	1259	Leh ...	34 9 30	77 34 15	11500	29 9 09	49 24·1	49 17·7	50 32·8	+5·1	+7·1	+6·5
52 I	1261	Kizil Langar ...	35 12 0	78 0 55	16000	20 9 09	50 51·0	50 46·5	51 59·9	+4·9	+6·9	+6·4
53 A	1299	Urla ...	31 55 20	76 53 10	4000	26 3 10	46 16·7	46 8·1	47 24·9	+5·4	+7·3	+6·6
	1302	Dera Gopipur ...	31 52 50	76 12 30	1500	5 4 10	46 14·1	46 4·1	47 22·0	+5·4	+7·4	+6·7
	1286	Hamīrpur ...	31 41 10	76 31 20	2000	15 3 10	45 52·0	45 43·8	47 1·2	+5·4	+7·4	+6·6
	1287	Galma ...	31 36 0	76 52 30	3000	18 2 10	45 47·4	45 38·9	46 56·3	+5·4	+7·4	+6·6
	1285	Bubhor ...	31 24 30	76 22 20	1300	11 2 10	45 22·4	45 14·4	46 32·3	+5·5	+7·4	+6·7
	1289	Sema or Semu ...	31 11 50	76 55 30	4300	26 2 10	45 6·8	44 58·0	46 15·4	+5·4	+7·4	+6·6
	1284	Abiana ...	31 5 30	76 33 10	1000	7 2 10	44 52·2	44 44·0	46 1·4	+5·5	+7·4	+6·6
53 B	287	Tokara ...	30 50 50	76 55 20	2100	4 2 10	44 33·5	44 25·3	45 42·7	+5·5	+7·4	+6·6
	68	Sirhind ...	30 37 40	76 22 40	870	6 2 02	43 32·0	44 10·6	45 28·6	+5·6	+7·5	+6·6
	67	Patiāla ...	30 20 40	76 24 0	800	13 4 10	43 51·5	43 40·7	44 58·7	+5·6	+7·5	+6·6
	101	Kesri ...	30 15 50	76 55 30	900	27 4 02	43 3·8	43 40 7	44 58·1	+5·5	+7·4	+6·6
53 C	234	Tarāori ...	29 48 20	76 56 0	850	14 11 02	42 13·7	42 47·9	44 4·8	+5·6	+7·4	+6·5
	285	Kalayat ...	29 41 10	76 13 40	760	17 4 03	42 4·9	42 37·4	43 55·4	+5·7	+7·5	+6·6
	286	Karainthi ...	29 1 10	76 29 0	730	20 4 03	41 14·7	41 47·8	43 4·7	+5·8	+7·4	+6·5
53 D	280	Dādri ...	28 36 10	76 16 40	800	8 4 03	40 33·7	41 6·8	42 24·3	+5·8	+7·5	+6·5
	279	Rewāri ...	28 12 20	76 36 20	900	6 4 03	39 50·9	40 24·6	41 41·0	+5·8	+7·4	+6·4
53 E	1298	Bajaora ...	31 50 50	77 9 50	3600	22 3 10	46 11·4	46 2·7	47 19·5	+5·4	+7·3	+6·6
	1297	Manglaur ...	31 40 0	77 17 50	3800	21 3 10	46 2·1	45 53·7	47 10·5	+5·4	+7·3	+6·6
	1296	Kot ...	31 31 0	77 25 10	7600	19 3 10	45 42·7	45 34·3	46 51·1	+5·4	+7·3	+6 6
	1294	Rāmpur ...	31 26 50	77 38 0	2800	12 3 10	45 33·7	45 25·0	46 41·3	+5·3	+7·3	+6·5
	1288	Pangna ...	31 23 10	77 7 20	4000	21 2 10	45 16·3	45 8·1	46 24·9	+5·4	+7·3	+6·6
	1295	Kotgarh ...	31 18 40	77 28 50	6500	15 3 10	45 21 8	45 13·4	46 29 7	+5·4	+7·3	+6·5
	1293	Sungri ...	31 18 40	77 41 50	8000	10 3 10	45 22·3	45 14·1	46 29·8	+5·3	+7·2	+6·5
	1292	Hat Koti ...	31 8 0	77 44 50	5000	7 3 10	44 58·0	44 49 1	46 4·8	+5·4	+7·2	+6 5
	1290	Jutogh ...	31 6 20	77 6 0	5800	28 2 10	45 0·4	44 51·3	46 8·7	+5·4	+7·4	+6·6
	1291	Bagund ...	31 6 7	77 27 30	5000	4 3 10	45 0·1	44 51·4	46 7·7	+5·4	+7·3	+6·5
53 F	1283	Nāhan ...	30 33 30	77 17 50	2990	31 1 10	44 3·1	43 55·0	45 11·3	+5·5	+7·3	+6·5
	165	Ambari ...	30 29 20	77 48 20	1570	21 11 02	43 30·2	44 3·1	45 18·8	+5 4	+7·2	+6 5
	164	Jhajra ...	30 20 30	77 54 50	1800	19 11 02	43 13·2	43 46·1	45 1·3	+5·4	+7·2	+6 4
	166	Mirzāpur ...	30 15 30	77 37 40	1150	23 11 02	43 9·1	43 42·7	44 59·0	+5·5	+7·3	+6·5
	167	Ghuna ...	30 3 50	77 34 40	930	24 11 02	42 49·7	43 23·3	44 39·6	+5·5	+7·3	+6 5
	168	Fatehpur ...	30 2 40	77 45 40	980	27 11 02	42 44·1	43 17·7	44 32·9	+5·5	+7·2	+6·4

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and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
53 G	229	Sahāranpur ...	29 57 50	77 32 40	900	4 11 02	42 36·1	43 10·2	44 26·5	+5·5	+7·3	+6·5
	230	Muzaffarnagar ...	29 28 30	77 42 0	800	5 11 02	41 51·2	42 25·3	43 40·5	+5·5	+7·2	+6·4
	233	Samālkha ...	29 14 40	77 0 10	750	12 11 02	41 22·2	41 57·0	43 13·9	+5·7	+7·4	+6·5
53 H	231	Meerut City ...	28 58 40	77 41 0	730	7 11 02	40 52·9	41 27·6	42 42·3	+5·6	+7·2	+6·3
	XLII	DELHI ...	28 40 15	77 13 48	680	23 1 20	42 22·8	41 6·6	42 22·4	+5·7	+7·3	+6·4
	600	Chola ...	28 18 30	77 43 40	660	21 4 04	40 14·0	40 40·3	41 54·5	+5·6	+7·2	+6·2
	1186	Palwal ...	28 8 50	77 19 50	650	1 5 08	40 6·9	40 11·3	41 26·0	+5·7	+7·2	+6·3
53 I	1336	Jhala ...	31 1 50	78 42 50	7000	9 5 11	45 4·0	44 46·9	46 1·0	+5·3	+7·1	+6·3
53 J	1337	Barahat ...	30 44 30	78 27 10	5000	18 5 11	44 43·9	44 26·8	45 41·4	+5·3	+7·1	+6·4
	1331	Mussoorie ...	30 27 40	78 5 10	6600	12 9 13	44 31·0	43 56·6	45 11·8	+5·4	+7·2	+6·4
	1282	Tehri ...	30 23 10	78 28 40	2200	20 1 10	43 55·4	43 47·5	45 1·6	+5·3	+7·1	+6·3
		DEHRA DUN OBSY.	30 19 19	78 3 19	2230			43 44·1	44 59·1	+5·4	+7·2	+6·4
	1281	Dungripont ...	30 14 10	78 52 0	1850	13 1 10	43 42·2	43 35·1	44 48·1	+5·3	+7·0	+6·2
53 K	1268	Pokhra ...	29 54 50	78 55 40	4000	25 11 09	43 9·3	43 2·9	44 15·9	+5·3	+7·0	+6·2
	1267	Chaumasu ...	29 54 0	78 44 0	3000	22 11 09	43 9·1	43 2·3	44 15·3	+5·3	+7·0	+6·2
	1266	Lansdowne ...	29 49 36	78 41 20	5600	21 11 09	43 4·1	42 57·7	44 10·7	+5·4	+7·0	+6·2
	228	Laksar ...	29 45 20	78 1 20	780	3 11 02	42 15·3	42 49·4	44 4·6	+5·5	+7·2	+6·4
	602	Nagina ...	29 25 50	78 25 0	800	26 4 04	41 54·1	42 19·5	43 33·1	+5·4	+7·1	+6·2
53 L	601	Morādābād ...	28 50 0	78 45 30	640	24 4 04	40 58·5	41 23·9	42 36·4	+5·4	+7·0	+6·1
	599	Garhmuktesar ...	28 46 43	78 4 0	700	19 4 04	40 57·3	41 23·2	42 36·8	+5·5	+7·1	+6·2
	587	Dhanāri ...	28 19 50	78 30 20	600	18 3 04	40 2·4	40 28·7	41 41·2	+5·5	+7·0	+6·1
53 N	1280	Simili ...	30 13 50	79 15 20	2400	9 1 10	43 40·7	43 33·7	44 46·1	+5·3	+6·9	+6·2
53 O	1278	Kofkote ...	29 57 0	79 53 40	3400	1 1 10	43 13·6	43 6·6	44 17·4	+5·2	+6·8	+6·0
	1279	Baijnāth ...	29 54 40	79 36 50	3400	4 1 10	43 7·7	43 0·8	44 12·1	+5·2	+6·8	+6·1
	1269	Saraikhet ...	29 53 10	79 4 40	5000	27 11 09	43 6·6	43 0·1	44 12·6	+5·3	+7·0	+6·1
	1270	Masi ...	29 49 0	79 16 50	3000	30 11 09	43 1·7	42 55·2	44 7·1	+5·3	+6·9	+6·1
	1271	Rānikhet ...	29 38 50	79 26 0	5900	3 12 09	42 49·1	42 42·5	43 54·4	+5·3	+6·9	+6·1
	1272	Almorā ...	29 35 50	79 40 10	5500	7 12 09	42 41·5	42 35·0	43 45·8	+5·3	+6·8	+6·0
	1273	Maurnala ...	29 27 13	79 47 0	6000	10 12 09	42 28·3	42 21·7	43 32·5	+5·3	+6·8	+6·0
	1265	Rāmnagar ...	29 23 30	79 7 20	1200	15 11 09	42 27·8	42 21·7	43 33·6	+5·3	+6·9	+6·1
	LVIII	KĀTHGODĀM ...	29 15 19	79 32 50	1680	24 3 20	43 19·6	42 7·4	43 18·2	+5·3	+6·8	+6·0
53 P	1304	Khatema ...	28 54 50	79 58 10	650	23 11 09	41 40·5	41 34·8	42 44·5	+5·3	+6·7	+5·9
	597	Richha Road ...	28 43 0	79 29 30	630	11 4 04	40 44·5	41 9·4	42 20·2	+5·3	+6·8	+6·0
	588	Aonla ...	28 17 50	79 10 10	550	20 3 04	40 0·9	40 26·8	41 38·2	+5·4	+6·9	+6·0
	589	Mīrānpur Katra ...	28 2 20	79 40 20	520	22 3 04	39 43·5	40 9·4	41 19·1	+5·4	+6·7	+5·9
54 A	276	Nangal Chaudhri ...	27 53 30	76 6 20	1000	28 3 03	39 8·5	39 42·1	40 59·6	+6·0	+7·5	+6·5
	278	Alwar ...	27 33 40	76 38 0	900	4 4 03	38 39·4	39 13·6	40 28·9	+5·9	+7·3	+6·3
	163	Ārnu ...	27 0 0	76 28 50	1000	23 4 02	37 38·1	38 18·6	39 34·5	+6·0	+7·4	+6·3
54 B	607	Gangāpur ...	26 28 50	76 44 20	1000	20 11 04	37 5·6	37 30·0	38 45·3	+6·0	+7·3	+6·3
	1329	Siwai Madhopur ...	26 1 30	76 21 0	950	8 4 10	36 48·0	36 38·5	37 54·4	+6·1	+7·4	+6·3
54 C	611	Indargarh ...	25 43 50	76 11 0	700	2 12 04	35 50·5	36 15·3	37 31·2	+6·1	+7·4	+6·3
	LIV	BĀRAN ...	25 5 32	76 30 30	850	19 2 20	36 32·6	35 15·9	36 31·8	+6·1	+7·4	+6·3
54 D	1328	Darah ...	24 50 0	76 0 50	1200	3 4 10	34 49·4	34 39·6	35 56·1	+6·2	+7·5	+6·3
	615	Jhālrapātan ...	24 36 0	76 9 20	1020	16 12 04	33 56·9	34 21·5	35 38·0	+6·2	+7·5	+6·3
	617	Khilchipur ...	24 2 0	76 34 20	1300	23 12 04	32 38·3	33 2·4	34 17·8	+6·1	+7·4	+6·2
54 E	1185	Nāndgaon ...	27 42 50	77 23 10	600	29 4 08	39 21·9	39 26·0	40 40·2	+5·8	+7·2	+6·2
	VI	BHARATPUR ...	27 13 53	77 29 24	650	22 2 20	40 4·0	38 48·9	40 3·1	+5·8	+7·2	+6·2
	585	Kherli ...	27 12 10	77 1 30	750	10 3 04	38 9·9	38 38·5	39 53·3	+5·9	+7·3	+6·2
54 F	1330	Hindaun ...	26 45 30	77 2 10	1000	10 4 10	38 5·2	37 56·2	39 11·0	+5·9	+7·3	+6·2
	569	Dholpur ...	26 41 50	77 54 20	600	28 1 04	37 33·0	38 1·7	39 14·8	+5·8	+7·1	+6·1
	606	Manakhar ...	26 24 30	77 16 10	1100	16 11 04	37 5·8	37 29·4	38 43·6	+5·9	+7·2	+6·2
	605	Birpur ...	26 7 30	77 8 20	700	13 11 04	36 28·6	36 52·7	38 6·9	+5·9	+7·2	+6·2
54 G	536	Mahona ...	25 53 40	77 46 40	1100	6 11 03	35 41·0	36 11·2	37 24·3	+5·8	+7·1	+6·1
	604	Bargaon ...	25 40 10	77 3 10	1600	10 11 04	35 42·0	36 5·5	37 20·3	+6·0	+7·3	+6·2
	537	Sīprī ...	25 26 0	77 39 20	1520	8 11 03	35 14·6	35 44·9	36 58·0	+5·9	+7·1	+6·1
	603	Shāhābād ...	25 14 40	77 9 40	1100	7 11 04	34 59·6	35 24·8	36 39·0	+6·0	+7·2	+6·2
54 H	543	Dharnaoda ...	24 35 50	77 5 50	1300	22 11 03	33 58·0	34 28·6	35 42·8	+6·0	+7·2	+6·2
	542	Pachar ...	24 34 50	77 43 40	1600	20 11 03	33 45·7	34 15·9	35 29·0	+5·9	+7·1	+6·1
	618	Naiākila ...	24 3 40	77 15 30	1500	26 12 09	33 49·8	33 42·7	34 56·4	+6·0	+7·2	+6·1
54 I	586	Alīgarh ...	27 53 44	78 4 20	600	13 3 04	39 21·2	39 48·3	41 1·4	+5·6	+7·1	+6·1
	584	Ganj Dūndwāra ...	27 43 30	78 56 20	550	8 3 04	39 7·8	39 34·2	40 45·6	+5·5	+6·9	+6·0
	570	Agra Cantonment ...	27 10 40	78 0 20	550	30 1 04	38 8·9	38 37·0	39 50·1	+5·7	+7·1	+6·1
	571	Shikohābād ...	27 4 30	78 35 30	540	2 2 04	38 4·6	38 32·2	39 44·2	+5·6	+7·0	+6·0
54 J	538	Bhind ...	26 34 5	78 47 50	570	11 11 03	38 1·0	38 29·6	39 40·5	+5·6	+6·9	+5·9

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
54 J	535	Gwalior ...	26 12 53	78 11 0	700c	4 11 03	36 32·6	37 1·5	38 13·5	+5·7	+7·0	+6·0
54 K	539	Datiā ...	25 38 40	78 27 30	860c	15 4 10	35 41·1	35 32·6	36 43·5	+5·7	+6·9	+5·9
	540	Basai ...	25 8 39	78 23 30	1200	15 11 03	35 0·5	35 29·4	36 40·9	+5·7	+7·0	+5·9
54 L	541(a)	Lalitpur ...	24 41 10	78 25 50	1200	18 11 03	34 1·4	34 31·1	35 42·0	+5·8	+6·9	+5·9
	LV	BINA ...	24 10 50	78 11 c	1350	16 2 20	34 15·4	33 2·6	34 14·6	+5·8	+7·0	+6·0
54 M	590	Anjhi ...	27 38 20	79 59 2c	500c	17 4 10	39 34·0	39 25·5	40 34·1	+5·3	+6·6	+5·8
	583	Farrukhābād ...	27 23 5	79 34 4c	450	6 3 04	38 40·0	39 5·9	40 15·1	+5·4	+6·7	+5·8
54 N	572	Alchulda ...	26 41 50	79 24 5c	450	4 2 04	37 28·0	37 55·0	39 4·2	+5·5	+6·7	+5·8
	574	Kālpī ...	26 7 c	79 45 5c	400	10 2 04	36 18·0	36 45·0	37 53·1	+5·5	+6·6	+5·7
54 O	575	Pūnch ...	25 49 0	79 2 50	500c	11 2 04	35 47·6	36 15·0	37 24·8	+5·6	+6·8	+5·8
	577	Mahobā ...	25 18 10	79 50 40	650c	16 2 04	34 59·9	35 26·9	36 35·0	+5·5	+6·6	+5·7
	576	Man-Kānīpur ...	25 15 10	79 9 1c	1000c	14 2 04	35 0·0	35 27·4	36 37·2	+5·6	+6·8	+5·8
54 P	645	Chhatarpur ...	24 55 50	79 35 1c	1050	15 4 05	34 47·5	35 7·9	36 16·0	+5·5	+6·6	+5·7
	644	Khurgapur ...	24 48 50	79 8 50	1100	12 4 05	34 53·9	35 14·6	36 23·8	+5·6	+6·7	+5·8
	643	Shāhgarh ...	24 19 10	79 7 2c	1300	9 4 05	33 5·5	33 26·6	34 35·8	+5·7	+6·7	+5·8
55 A	560	Shujālpur ...	23 23 0	76 43 4c	1480	7 1 04	32 3·4	32 34·2	33 49·0	+6·1	+7·3	+6·2
	559	Tarāna Road ...	23 15 40	76 3 50	1620	5 1 04	31 10·7	31 42·0	32 58·5	+6·2	+7·5	+6·3
55 B	619	Thuria ...	22 46 10	76 41 20	1500	22 11 11	30 10·4	29 49·5	31 4·3	+6·2	+7·3	+6·2
	620	Hāt Piplia ...	22 46 0	76 17 10	1700	7 12 11	31 12·0	30 50·7	32 6·6	+6·2	+7·4	+6·3
	556	Barwāha ...	22 15 20	76 1 30	630	31 3 09	29 39·6	29 37·4	30 53·9	+6·3	+7·5	+6·3
	550	Piplāni ...	22 7 10	76 47 30	900	9 12 03	29 59·9	30 30·9	31 45·7	+6·1	+7·3	+6·2
55 C	551	Khandwā ...	21 49 20	76 21 5c	1000c	12 12 03	29 10·9	29 42·3	30 57·7	+6·2	+7·4	+6·2
	797	Darni ...	21 32 40	76 53 10	1000	16 4 10	28 1·7	27 52·6	29 6·9	+6·1	+7·3	+6·1
	552	Burhānpur ...	21 20 10	76 11 40	850	14 12 03	27 20·0	27 51·9	29 8·4	+6·3	+7·5	+6·3
	798	Jiri ...	21 10 40	76 50 50	1000	5 4 10	28 40·7	28 31·6	29 45·9	+6·1	+7·3	+6·1
55 D	781	Nāndūra ...	20 50 20	76 28 30	870	7 1 05	25 26·4	25 50·1	27 5·5	+6·2	+7·4	+6·2
	1162	Deūlghāt ...	20 32 c	76 7 1c	1300	19 11 07	26 10·4	26 17·c	27 33·0	+6·3	+7·5	+6·2
	1163	Mehkar ...	20 9 10	76 35 1c	1100	22 11 07	25 48·3	25 55·1	27 9·4	+6·2	+7·3	+6·1
55 E	546	Bhīlsa ...	23 31 10	77 48 5c	1360	21 1 10	33 12·5	33 5·0	34 17·0	+5·9	+7·0	+6·0
	547	Bhopāl ...	23 15 50	77 24 3c	1650	1 12 03	31 23·7	31 54·2	33 7·3	+6·0	+7·1	+6·1
55 F	548	Hoshangābād ...	22 45 10	77 43 0	1030	4 12 03	30 15·5	30 45·9	31 57·9	+6·0	+7·0	+6·0
	549	Pagdhāl ...	22 24 50	77 21 10	1000	7 12 03	29 47·6	30 18·0	31 31·1	+6·0	+7·1	+6·1
	931	Dhar ...	22 21 20	77 51 20	1300	4 3 06	29 21·8	29 39·2	30 51·2	+6·0	+7·0	+6·0
	930	Bori ...	22 8 10	77 25 10	1600	27 2 06	28 22·8	28 39·7	29 52·8	+6·0	+7·1	+6·1
55 G	794	Betūl ...	21 54 50	77 53 4c	2180	28 2 10	28 52·5	28 44·3	29 56·3	+5·9	+7·0	+6·0
	795(a)	Palsia ...	21 45 2c	77 31 0	1800	12 3 10	28 39·2	28 30·9	29 43·5	+6·0	+7·1	+6·0
	796	Rangubali ...	21 42 40	77 8 2c	1600	19 4 10	28 13·4	28 4·4	29 18·1	+6·1	+7·2	+6·1
	800	Bumunwadda ...	21 19 20	77 44 20	1300	2 4 05	28 6·4	28 29·2	29 41·2	+6·0	+7·0	+6·0
	799	Anjangaon ...	21 10 40	77 18 30	1300	2 4 10	27 19·6	27 10·7	28 23·8	+6·1	+7·1	+6·1
55 H	LXIV	AMRAOTI ...	20 55 30	77 45 5c	1120	18 3 20	28 40·4	27 27·6	28 39·1	+6·0	+7·0	+5·9
	780	Yavlkhed ...	20 42 50	77 4 3c	960	5 1 05	26 5·5	26 28·8	27 42·5	+6·1	+7·2	+6·1
	753	Karanja ...	20 28 3c	77 29 2c	1400	27 1 10	28 7·6	27 59·9	29 11·9	+6·0	+7·0	+6·0
	752	Bāsim ...	20 6 53	77 8 20	1800	12 1 10	26 41·3	26 34·1	27 46·7	+6·1	+7·1	+6·0
	1164	Chikni ...	20 5 c	77 53 3c	1000	13 1 13	25 41·2	25 13·6	26 24·0	+5·9	+6·9	+5·8
55 I	568	Saugor ...	23 50 5c	78 44 2c	1680	28 3 10	32 59·6	32 51·7	34 1·5	+5·7	+6·8	+5·8
	642	Gourjhamar ...	23 31 30	78 56 c	1400	4 4 05	31 44·9	32 6·0	33 15·2	+5·7	+6·7	+5·8
	641	Silvānī ...	23 18 20	78 26 2c	1200	1 3 10	31 15·2	31 7·1	32 18·0	+5·8	+6·9	+5·9
55 J	562	Mohpāni ...	22 44 42	78 50 2c	1250	12 1 04	30 4·9	30 33·4	31 42·6	+5·7	+6·7	+5·8
	561	Sohāgpur ...	22 41 30	78 11 20	1080	10 1 04	29 14·9	29 44·4	30 55·3	+5·9	+6·9	+5·9
	932	Jamundonga ...	22 23 c	78 31 30	1800	9 3 06	29 39·2	29 55·8	31 5·6	+5·8	+6·8	+5·8
	773	Chhindwāra ...	22 3 4c	78 57 30	2300	19 12 04	27 57·4	28 20·2	29 28·3	+5·7	+6·6	+5·7
55 K	793	Doonawa ...	21 52 c	78 29 3c	2400	10 3 05	28 37·4	28 58·8	30 8·6	+5·8	+6·8	+5·8
	801	Loncc ...	21 23 0	78 12 1c	1400	5 4 05	27 33·7	27 55·7	29 5·5	+5·9	+6·8	+5·8
	802	Kātol ...	21 16 0	78 35 5c	1700	31 12 11	27 50·6	27 29·9	28 38·6	+5·8	+6·7	+5·7
55 L	778	Dhāmangaon ...	20 46 54	78 8 4c	980	9 2 12	26 44·7	26 23·4	27 33·2	+5·9	+6·8	+5·8
	776	Pauuār ...	20 46 50	78 42 4c	830	27 1 12	26 39·8	26 19·6	27 27·7	+5·8	+6·6	+5·7
55 M	566	Salaia ...	23 51 10	79 58 2c	1410	26 4 05	32 37·7	32 58·1	34 5·1	+5·5	+6·5	+5·6
	567	Damoh ...	23 50 0	79 26 c	1200	23 1 04	32 28·9	32 56·3	34 4·4	+5·6	+6·6	+5·7
	564	Mirganj ...	23 9 4c	79 46 50	1300	15 1 04	31 28·8	31 56·3	33 3·3	+5·5	+6·5	+5·6
	XVII	JUBBULPORE ...	23 9 26	79 57 9	1320	11 3 20	32 16·1	31 8·6	32 15·0	+5·5	+6·4	+5·6
55 N	563	Narsinghpur ...	22 56 4c	79 12 3c	1200	13 1 04	30 35·4	31 3·9	32 12·0	+5·7	+6·6	+5·7
	791	Lakhnadon ...	22 36 10	79 36 30	2000	24 2 05	29 33·5	29 55·3	31 2·3	+5·6	+6·5	+5·6

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and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation.	Value corrected to date.	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
55 N	933	Jangawani ...	22 23 30	79 9 20	3000	17 3 06	29 32·2	29 48·2	30 56·3	+5·7	+6·6	+5·7
	772	Seonī ...	22 4 10	79 32 50	202c	17 12 04	28 53·4	29 15·8	30 22·8	+5·6	+6·5	+5·6
55 O	792	Deolapar ...	21 35 10	79 22 20	129c	1 3 05	27 51·6	28 12·9	29 19·9	+5·6	+6·5	+5·6
	774	Koka ...	21 15 30	79 43 0	840	22 12 04	27 10·6	27 33·0	28 38·9	+5·6	+6·4	+5·5
	775	Kamptee ...	21 12 30	79 12 40	94c	10 1 12	27 58·0	27 38·2	28 45·2	+5·7	+6·5	+5·6
55 P	803	Umrer ...	20 51 0	79 20 0	1000	4 3 12	27 46·6	27 25·6	28 31·5	+5·6	+6·4	+5·5
	804	Dokai-Surandi ...	20 46 0	79 48 0	800	17 4 05	26 21·7	26 40·6	27 45·4	+5·5	+6·3	+5·4
	1040	Chimur ...	20 29 0	79 22 10	100c	10 1 07	25 47·0	25 58·3	27 4·2	+5·6	+6·4	+5·5
	777	Warorā ...	20 14 20	79 0 20	69c	29 12 04	25 8·1	25 29·8	26 36·3	+5·7	+6·5	+5·5
56 A	1311	Sarsooty ...	19 59 50	76 29 50	1900	31 12 09	25 27·6	25 19·8	26 34·7	+6·2	+7·4	+6·1
	1310	Rahir ...	19 59 40	76 17 20	164c	29 12 09	25 14·2	25 7·0	26 22·4	+6·3	+7·4	+6·2
	1312	Kowotah ...	19 49 50	76 50 10	168c	4 1 10	25 3·3	24 56·0	26 9·7	+6·2	+7·2	+6·1
	374	Satona ...	19 29 30	76 21 30	144c	24 12 09	24 22·4	24 15·1	25 30·0	+6·3	+7·4	+6·1
	XLVII	PARBHANI ...	19 15 20	76 46 50	135c	17 11 19	25 33·6	24 20·7	25 34·4	+6·2	+7·2	+6·1
56 B	654	Mominābād ...	18 44 0	76 23 30	2000	27 11 04	22 12·4	22 37·4	23 52·3	+6·3	+7·4	+6·1
	1326	Tadwale ...	18 22 40	76 3 10	220c	10 3 10	24 21·8	24 13·0	25 28·5	+6·3	+7·5	+6·1
	653	Ter ...	18 19 40	76 9 10	22cc	13 3 10	21 33·8	21 24·8	22 40·3	+6·3	+7·5	+6·1
56 C	659	Dallium ...	17 51 50	76 28 40	2100	14 12 04	20 8·1	20 33·0	21 46·8	+6·2	+7·3	+6·0
	1307	Telmood ...	17 49 20	76 45 20	2000	29 11 09	19 56·0	19 49·6	21 2·3	+6·2	+7·2	+5·9
	XXXIV	HOTGI ...	17 33 40	76 0 20	153c	24 11 19	21 32·6	20 18·3	21 33·3	+6·3	+7·5	+6·0
	1306 (a)	Aland ...	17 32 50	76 34 40	1800	26 11 09	20 35·4	20 29·0	21 41·7	+6·2	+7·2	+5·9
	176	Ghāngāpur ...	17 20 20	76 36 0	1440	15 11 09	19 30·8	19 23·6	20 35 8	+6·2	+7·2	+5·8
	1305	Gulbarga ...	17 18 50	76 49 10	1490	21 11 09	19 48·9	19 42·6	20 54·2	+6·1	+7·1	+5·8
	177	Wādi Junction ...	17 3 0	77 0 0	1400	17 11 09	18 57·9	18 51·3	20 2·4	+6·1	+7·1	+5·7
56 D	662	Gebbasaligi ...	16 58 50	76 21 0	160c	27 12 04	18 7·8	18 32·7	19 45·5	+6·3	+7·3	+5·8
	663	Shorāpur ...	16 31 0	76 45 40	180c	1 1 05	17 28·3	17 53·4	19 4·0	+6·2	+7·1	+5·6
	664	Mudgal ...	16 1 10	76 27 10	1900	4 1 05	15 57·9	16 23·0	17 34·2	+6·2	+7·2	+5·6
56 E	751	Hingoli ...	19 43 30	77 9 0	1500	7 1 10	25 30·7	25 23·7	26 36·3	+6·1	+7·1	+6·0
	750	Umarkhed ...	19 36 9	77 41 20	1500	28 4 05	24 15·7	24 38·2	25 49·1	+6·0	+6·9	+5·9
	376	Nānder ...	19 9 30	77 18 10	1200	18 12 09	24 12·8	24 6·1	25 17·6	+6·0	+7·0	+5·9
56 F	377	Dharmabad ...	18 53 10	77 51 30	122c	20 12 09	23 10·9	23 3·4	24 12·7	+5·9	+6·8	+5·7
	1309	Kandahar ...	18 51 40	77 11 30	1500	14 12 09	23 9·2	23 2·1	24 14·2	+6·1	+7·1	+5·9
	655	Udgīr ...	18 23 30	77 7 0	2100	10 12 09	22 9·2	22 2·9	23 15·0	+6·1	+7·1	+5·9
	656	Aurād ...	18 15 0	77 24 30	2000	7 12 09	21 5·4	21 45·3	22 56·3	+6·0	+7·0	+5·8
	1308	Bhālki ...	18 2 10	77 11 40	2000	4 12 09	20 49·0	20 42·9	21 53·9	+6·1	+7·0	+5·8
56 G	657	Bīdar ...	17 55 0	77 31 0	220c	7 12 04	20 33·4	20 57·3	22 7·2	+6·0	+6·9	+5·7
	658	Rajasoor ...	17 48 30	77 2 30	2100	1 12 09	20 57·7	20 51·5	22 3·1	+6·1	+7·1	+5·8
	714	Tāndūr ...	17 15 10	77 34 40	180c	24 12 04	18 45·7	19 9·7	20 18·0	+6·0	+6·8	+5·5
56 H	178	Yādgīr ...	16 44 40	77 8 10	120c	31 12 02	17 33·2	18 9·4	19 18·9	+6·1	+7·0	+5·5
	732	Kothakotta ...	16 23 27	77 56 0	1200	23 2 05	17 25·3	17 47·4	18 53·6	+5·8	+6·7	+5·2
	179	Raichūr ...	16 12 0	77 20 30	133c	2 1 03	16 31·2	17 6·7	18 15·1	+6·0	+6·9	+5·4
56 I	747	Danura ...	19 46 50	78 45 10	690	2 1 13	26 0·5	25 34·6	26 41·6	+5·7	+6·5	+5·6
	748	Kupti ...	19 21 13	78 25 10	120c	14 12 11	23 23·8	23 3·8	24 11·4	+5·8	+6·6	+5·6
	749	Dhānura ...	19 19 10	78 8 30	1300	25 4 05	23 43·8	24 4·4	25 13·1	+5·9	+6·7	+5·7
56 J	741	Bālkonda ...	18 51 31	78 19 40	116c	27 3 05	22 31·5	22 53·5	24 1·1	+5·8	+6·6	+5·6
	742	Jagtial ...	18 47 30	78 54 40	120c	14 2 12	24 8·8	23 49·2	24 54·6	+5·6	+6·4	+5·4
	378	Upalwai ...	18 25 10	78 19 20	172c	22 11 03	21 34·6	22 4·4	23 11·5	+5·8	+6·6	+5·5
56 K	379	Masaipet ...	17 52 40	78 27 30	171c	24 11 03	20 16·5	20 44·2	21 50·2	+5·7	+6·5	+5·4
	716	Kistnapur ...	17 47 57	78 44 11	170c	31 12 04	20 5·6	20 28·5	21 34·0	+5·7	+6·5	+5·3
	XV	SECUNDERĀBĀD ...	17 27 44	78 29 37	176c	20 11 19	21 36·3	20 31·4	21 36·9	+5·7	+6·5	+5·3
	715	Gollagūdā ...	17 25 0	78 1 50	170c	25 12 04	19 28·8	19 52·1	20 59·3	+5·8	+6·7	+5·4
	734	Shumshabad ...	17 15 33	78 23 50	160c	3 4 12	20 4·5	19 43·4	20 48·9	+5·7	+6·5	+5·3
	735	Nārāyanpur ...	17 9 43	78 52 40	140c	30 3 12	19 34·5	19 13·5	20 17·4	+5·6	+6·4	+5·1
56 L	733	Rajumpett ...	16 51 39	78 9 40	180c	25 2 05	18 24·7	18 47·2	19 52·8	+5·8	+6·6	+5·2
	736	Devarkonda ...	16 41 11	78 55 10	150c	7 3 05	17 42·1	18 3·4	19 6·8	+5·6	+6·4	+5·0
56 M	LXII	CHĀNDA ...	19 57 50	79 17 40	770	15 3 20	26 10·7	25 4·2	26 9·6	+5·6	+6·4	+5·4
	1057	Ghot ...	19 49 0	79 59 20	800	24 3 07	24 39·5	24 49·9	25 53·6	+5·4	+6·2	+5·3
	745	Sirpur Tāndūr ...	19 28 30	79 35 0	600	12 4 05	23 30·8	24 49·5	25 53·8	+5·5	+6·3	+5·3
	744	Sokra ...	19 27 40	79 4 10	150c	8 4 05	23 50·8	24 11·6	25 17·0	+5·6	+6·4	+5·4
	1056	Ahiri ...	19 24 40	79 59 50	600	20 3 07	23 54·1	24 3·9	25 7·1	+5·4	+6·2	+5·2
	743	Tāndūr ...	19 9 0	79 26 40	800	15 1 12	23 51·8	23 32·9	24 37·2	+5·5	+6·3	+5·3
56 N	719	Asanada ...	18 45 32	79 44 30	600	10 1 05	22 18·5	22 40·3	23 43·5	+5·4	+6·2	+5·2
	718	Pedapali ...	18 36 30	79 22 30	1100	23 2 12	22 21·6	22 1·6	23 5·4	+5·5	+6·3	+5·2
	720	Kottapalle ...	18 23 2	79 47 10	700	12 1 05	20 58·6	21 18·8	22 21·5	+5·4	+6·2	+5·1
	717	Thaviogpully ...	18 16 41	79 6 30	700	20 3 12	21 55·7	21 35·6	22 40·0	+5·6	+6·4	+5·2

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES		
										1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
56 O	381	Warangal ...	17 58 40	79 36 50	600	29 11 03	22 22·0	22 49·7	23 51·9	+5·4	+6·2	+5·0
	380 (a)	Alir ...	17 38 30	79 2 50	500	25 3 12	20 31·9	20 12·1	21 15·4	+5·6	+6·3	+5·1
	740	Teepurtee ...	17 0 37	79 24 50	500	21 3 05	18 27·1	18 47·7	19 49 4	+5·4	+6·2	+4·9
56 P	739	Dachepalle ...	16 36 0	79 43 40	400	18 3 05	17 35·9	17 56·0	18 56·6	+5·3	+6·1	+4·8
	737	Yelesvaram Ferry ...	16 28 29	79 12 40	400	9 3 05	17 25·4	17 46·3	18 48·6	+5·5	+6·3	+4·9
	738	Komoravale ...	16 6 10	79 20 0	500	13 3 05	17 12·6	17 33·7	18 34·9	+5·5	+6·2	+4·8
57 A	934	Hospet ...	15 16 45	76 23 0	1570	12 2 06	14 30·7	14 48·8	15 59·0	+6·2	+7·2	+5·4
	365	Bellary ...	15 8 50	76 55 30	1480	5 1 08	14 30·9	14 37·1	15 45·1	+6·1	+7·0	+5·2
57 B	674	Nundybayur ...	14 54 10	76 3 20	2000	11 2 05	13 47·8	14 10·2	15 21·0	+6·3	+7·3	+5·4
	401	Hangal ...	14 44 10	76 41 50	1840	6 2 04	13 4·5	13 34·6	14 43·2	+6·1	+7·1	+5·2
	402	Challakere ...	14 19 0	76 39 0	1890	8 2 04	12 19·6	12 48·9	13 57·0	+6·1	+7·1	+5·1
	209	Sāsālu ...	14 12 40	76 6 40	2500	14 3 03	12 9·2	12 43·5	13 53·3	+6·2	+7·3	+5·2
57 C	403	Hiriyūr ...	13 56 30	76 36 40	1960	10 2 04	11 24·1	11 54·0	13 1·6	+6·1	+7·1	+5·0
	206	Tiptūr ...	13 15 10	76 28 30	2900	8 3 03	10 2·5	10 36·3	11 44·0	+6·1	+7·2	+4·9
57 D	449	Yediyur ...	12 58 40	76 51 20	2460	11 1 04	9 13·3	9 42·6	10 48·6	+6·0	+7·0	+4·8
	448	Dandiganhalli ...	12 58 20	76 16 50	3020	8 1 04	9 7·9	9 37·3	10 45·0	+6·1	+7·2	+4·9
	203	Seringapatam ...	12 25 30	76 40 40	2340	1 3 03	8 6·9	8 41·1	9 47·7	+5·9	+7·1	+4·8
	201	Hunsūr ...	12 18 20	76 16 50	2560	24 2 03	7 40·6	8 15·2	9 22·9	+6·0	+7·2	+4·9
	202	Nanjangūd ...	12 7 40	76 40 40	2200	28 2 03	7 28·7	8 2·2	9 8·8	+5·9	+7·1	+4·8
57 E	180	Adoni ...	15 37 0	77 16 30	1360	4 1 03	15 14·3	15 49·2	16 56·6	+6·0	+6·9	+5·2
	713	Kurnool Road ...	15 23 20	77 52 10	1500	22 12 04	15 1·3	15 24·9	16 29·5	+5·9	+6·6	+5·0
	xxxv	GUNTAKAL ...	15 10 48	77 22 57	1410	13 2 20	16 22·0	15 15·1	16 21·4	+6·0	+6·8	+5·1
57 F	354	Gārladinne ...	14 50 0	77 35 20	1200	20 3 03	12 53·4	13 27·1	14 32·3	+5·9	+6·7	+5·0
	400	Kalyandrug ...	14 32 50	77 6 40	1800	1 2 04	13 14·7	13 44·2	14 50·6	+6·0	+6·9	+5·0
	351	Dharmavaram ...	14 25 20	77 42 40	1200	13 3 03	12 54·4	13 28·1	14 32·8	+5·8	+6·7	+4·9
	399	Povugada ...	14 6 20	77 17 10	2100	29 1 04	11 59·3	12 28·2	13 33·5	+5·9	+6·8	+4·9
57 G	352	Malugur ...	13 54 0	77 32 50	1800	16 3 03	11 44·1	12 16·3	13 20·5	+5·9	+6·7	+4·8
	353	Thondebhavi ...	13 30 10	77 31 0	2400	18 3 03	10 33·7	11 7·8	12 12·0	+5·8	+6·7	+4·8
	205	Tumkūr ...	13 20 0	77 6 0	2680	6 3 03	10 5·1	10 39·5	11 44·9	+5·9	+6·9	+4·8
57 H	VII	BANGALORE ...	12 58 43	77 35 26	3060	10 12 19	11 0·4	9 57·0	11 0·7	+5·8	+6·7	+4·7
	204	Channapatna ...	12 39 40	77 12 0	2100	3 3 03	8 48·2	9 19·8	10 24·1	+5·8	+6·8	+4·7
	450	Singanallur ...	12 8 30	77 13 0	2100	21 1 04	7 50·7	8 18·4	9 22·2	+5·8	+6·8	+4·6
57 I	731	Kurnool City ...	15 49 50	78 2 20	970	19 2 05	16 1·7	16 24·4	17 29·0	+5·8	+6·6	+5·0
	712	Nandyāl ...	15 28 20	78 28 0	1000	13 1 10	15 58·5	15 52·2	16 55·1	+5·7	+6·4	+4·9
	711	Diguvametta ...	15 23 30	78 49 20	1500	18 12 04	15 10·9	15 33·3	16 35·1	+5·6	+6·3	+4·8
57 J	730	Chāgalamarri ...	14 56 41	78 35 20	600	14 2 05	13 48·4	14 9·2	15 11·1	+5·6	+6·4	+4·7
	182	Kondāpuram ...	14 46 20	78 11 40	720	9 1 03	13 17·9	13 52·2	14 55·2	+5·7	+6·5	+4·8
	183	Cuddapah ...	14 27 10	78 49 20	450	11 1 03	12 32·9	13 4·9	14 5·1	+5·5	+6·2	+4·6
	350	Kadiri ...	14 6 50	78 9 0	1900	12 3 03	12 0·9	12 33·6	13 36·1	+5·7	+6·5	+4·7
57 K	349	Tummanamgutta ...	13 42 50	78 21 30	2000	10 3 03	11 13·7	11 46·0	12 47·4	+5·6	+6·4	+4·6
	348	Kalikiri ...	13 28 40	78 47 40	2000	8 3 03	10 40·1	11 11·4	12 11·1	+5·5	+6·2	+4·5
	398	Madanapalle ...	13 34 40	78 30 30	2400	24 1 04	10 36·8	11 4·1	12 4·4	+5·6	+6·3	+4·5
	675	Tadgole ...	13 24 50	78 13 0	2800	20 2 05	10 22·8	10 42·4	11 43·8	+5·6	+6·4	+4·6
	397	Palmaner ...	13 12 40	78 44 50	2200	21 1 04	9 44·3	10 10·9	11 10·1	+5·4	+6·2	+4·4
57 L	190	Bowringpet ...	12 58 50	78 11 0	2660	25 1 03	9 21·2	9 52·8	10 53·7	+5·6	+6·4	+4·5
	1335	Mysore Mines on Surface	12 55 30	78 15 40	2950	2 3 11	9 55·0	9 41·1	10 41·4	+5·6	+6·3	+4·5
	,,	,, ,, Underground	12 55 30	78 15 40	,,	3 3 11	9 55·9	9 41·6	10 41·9	+5·6	+6·3	+4·5
	189	Jalārpet ...	12 34 0	78 34 10	1320	23 1 03	8 45·8	9 16·6	10 15·3	+5·4	+6·2	+4·3
	191	Morappūr ...	12 7 30	78 21 40	1310	28 1 03	7 17·2	7 47·7	8 46·4	+5·4	+6·2	+4·3
57 M	709	Gundlakamma ...	15 59 10	79 38 20	400	14 12 04	16 16·5	16 38·3	17 38·4	+5·3	+6·1	+4·7
	726	Podili ...	15 37 5	79 36 20	300	3 2 05	15 19·5	15 39·1	16 38·1	+5·3	+6·0	+4·6
	LXI	CUMBUM ...	15 35 50	79 6 40	600	16 2 20	17 6·2	16 4·9	17 5·6	+5·5	+6·2	+4·7
	727	Pāmūru ...	15 5 20	79 24 40	500	6 2 05	14 26·5	14 45·7	15 45·3	+5·4	+6·1	+4·6
57 N	387	Bitragunta ...	14 48 40	79 57 20	30	5 1 09	14 12·7	14 12·7	15 9·5	+5·1	+5·8	+4·4
	729	Badvel ...	14 43 57	79 3 50	600	11 2 05	13 28·5	13 49·9	14 50·1	+5·5	+6·2	+4·6
	728	Nandabaram ...	14 40 33	79 28 50	100	8 2 05	13 13·5	13 34·2	14 32 7	+5·3	+6·0	+4·5
	346	Gūdūr ...	14 8 40	79 51 10	50	4 3 03	11 55·9	12 25·7	13 20·9	+5·1	+5·7	+4·2
	184	Reddipalle ...	14 5 30	79 14 0	560	13 1 03	11 45·6	12 16·8	13 14·8	+5·3	+6·0	+4·4
57 O	185	Rēnigunta ...	13 38 20	79 30 50	370	1 3 03	10 40·1	11 9·8	12 5·6	+5·2	+5·8	+4·2
	347	Pākala ...	13 27 0	79 7 20	1200	6 3 03	9 42·4	10 12·3	11 9·8	+5·3	+6·0	+4·3
	xxxvi	ARKONAM ...	13 4 30	79 40 20	300	8 2 20	11 7·7	10 12·6	11 7·3	+5·1	+5·7	+4·1
57 P	188	Katpadi ...	12 58 40	79 7 40	700	25 2 03	9 22·1	9 52·2	10 49·2	+5·3	+6·0	+4·2
	345	Chingleput ...	12 41 20	79 58 30	130	28 2 03	8 4·0	8 33·1	9 25·6	+5·0	+5·5	+3·9
	344	Polūr ...	12 30 50	79 7 50	700	23 2 03	7 23·7	7 54·5	8 50·4	+5·2	+5·9	+4·1
	389	Acharapakkam ...	12 24 10	79 49 10	135	15 12 03	6 52·0	7 17·1	8 9·6	+5·0	+5·5	+3·9
	343	Tandarai ...	12 6 40	79 9 0	500	21 2 03	7 12·0	7 42·7	8 38·6	+5·2	+5·9	+4·1

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
58 A	453	Gundalpet ...	11 48 20	76 41 20	2600	4 2 04	6 39·3	7 6·5	8 12·0	+5·9	+7·0	+4·7
	454	Sultan's Battery ...	11 39 40	76 15 30	2900	7 2 04	6 23·4	6 51·5	7 58·7	+5·9	+7·2	+4·8
	455	Ootacamund ...	11 24 30	76 42 50	8000	13 2 04	5 43·1	6 11·5	7 16·5	+5·8	+7·0	+4·6
	195	Coonoor ...	11 20 40	76 47 50	6000	5 2 03	5 39·6	6 13·8	7 18·8	+5·8	+7·0	+4·6
	456	Nilambūr ...	11 16 20	76 13 20	100	17 2 04	5 24·4	5 53·3	7 0·0	+5·9	+7·2	+4·7
58 B	197	Pattāmbi ...	10 48 10	76 10 40	70	10 2 03	5 6·0	5 40·2	6 46·9	+5·8	+7·2	+4·7
	196	Olavakkōt ...	10 48 10	76 38 20	260	8 2 03	4 31·0	5 5·2	6 10·2	+5·8	+7·0	+4·6
	457	Anamalai ...	10 34 50	76 56 0	1300	23 2 04	4 3·5	4 31·4	5 34·7	+5·7	+6·8	+4·5
	475	Irinjālakuda ...	10 20 20	76 13 0	50	4 5 04	4 4·8	4 32·1	5 37·7	+5·8	+7·1	+4·6
	474	Kodhamangalam ...	10 3 40	76 37 40	100	2 5 04	2 37·8	3 4·6	4 8·5	+5·7	+6·9	+4·5
58 C	473	Cochin ...	9 57 50	76 14 0	10	28 4 04	2 55·9	3 22·7	4 28·3	+5·7	+7·1	+4·6
	464	Kanjirapalli ...	9 33 0	76 46 50	300	25 3 04	1 26·2	1 53·1	2 55·4	+5·6	+6·8	+4·3
	465	Alleppey ...	9 29 50	76 19 10	0	28 3 04	0 30·2	0 57·1	2 1·6	+5·6	+7·0	+4·5
	467	Punalūr ...	9 1 20	76 55 30	200	4 4 04	0 43·1	1 8·5	2 9·1	+5·4	+6·6	+4·2
58 D	466	Quilon ...	8 53 30	76 36 0	0	1 4 04	−0 24·3	0 2·1	1 3·3	+5·5	+6·7	+4·2
	472	Trivandrum ...	8 28 50	76 55 30	0	24 4 04	−0 28·0	−0 3·1	0 56·0	+5·3	+6·5	+4·0
58 E	451	Kāveripuram ...	11 54 20	77 45 30	1000	27 1 04	7 46·9	8 14·6	9 16·1	+5·6	+6·5	+4·5
	452	Satyamangalam ...	11 30 0	77 14 20	800	31 1 04	6 13·8	6 41·7	7 44·4	+5·7	+6·7	+4·5
	193	Erode ...	11 19 40	77 43 50	540	1 2 03	5 27·7	6 0·2	7 0·6	+5·5	+6·4	+4·4
	194	Sōmanūr ...	11 5 10	77 11 0	1120	3 2 03	5 11·4	5 45·0	6 47·7	+5·7	+6·7	+4·5
58 F	458	Dhārāpuram ...	10 43 30	77 31 20	850	27 2 04	4 32·1	4 58·5	5 59·0	+5·5	+6·5	+4·3
		KODAIKANAL Obsy.	10 13 50	77 27 46	7550			3 36·0	4 36·4	+5·5	+6·5	+4·3
	330	Ammayanayakkanur ...	10 10 30	77 54 20	780	18 1 03	2 39·2	3 11·0	4 9·3	+5·3	+6·3	+4·1
	462	Nyamakod Estate ...	10 8 10	77 3 10	8500	16 3 04	3 1·3	3 28·2	4 30·4	+5·6	+6·7	+4·4
	459	Periyakulam ...	10 7 40	77 33 20	950	3 3 04	3 1·1	3 27·0	4 26·4	+5·4	+6·4	+4·2
	460	Top Station ...	10 6 40	77 13 20	8000	11 3 04	3 48·8	4 15·2	5 16·3	+5·5	+6·6	+4·3
	461	Munnar ...	10 4 10	77 3 20	7500	13 3 04	3 2·6	3 29·5	4 31·7	+5·6	+6·7	+4·4
58 G	463	Kuruvanath ...	9 38 50	77 12 30	4000	21 3 04	2 0·0	2 26·4	3 26·4	+5·5	+6·5	+4·2
	469	Virudupatti ...	9 35 50	77 57 40	330	10 4 04	0 44·6	1 9·0	2 5·7	+5·2	+6·2	+3·9
	329	Koilpati ...	9 10 30	77 51 50	290	14 1 03	0 32·5	1 3·7	2 0·4	+5·2	+6·2	+3·9
58 H	468	Tenkāsi ...	8 58 0	77 18 30	500	7 4 04	0 32·7	0 57·6	1 56·0	+5·3	+6·4	+4·0
	XLIV	TINNEVELLY ...	8 44 0	77 42 30	130	12 1 20	1 35·4	0 39·7	1 35·3	+5·1	+6·1	+3·8
	471	Nāgercoil ...	8 11 20	77 26 0	200	19 4 04	−1 23·1	−0 59·1	−0 3·4	+5·1	+6·2	+3·7
58 I	192	Salem ...	11 40 0	78 6 50	920	30 1 03	5 23·3	5 54·7	6 54·0	+5·5	+6·3	+4·3
	391	Atūr ...	11 35 40	78 36 50	500	23 12 03	6 26·7	6 53·3	7 50·4	+5·3	+6·1	+4·1
	392	Perambalūr ...	11 14 10	78 51 50	500	26 12 03	5 28·5	5 54·5	6 49·9	+5·2	+5·9	+4·0
58 J	336	Puliyur ...	10 56 0	78 10 10	370	1 2 03	4 48·3	5 20·2	6 18·4	+5·4	+6·2	+4·2
	335	Trichinopoly ...	10 47 30	78 40 40	270	27 12 07	4 50·5	4 55·5	5 51·0	+5·2	+6·0	+3·9
	331	Manapārai ...	10 36 40	78 25 30	510	20 1 03	3 53·8	4 25·0	5 21·6	+5·2	+6·1	+4·0
	393	Pudukottai ...	10 22 50	78 48 50	400	1 1 04	3 40·6	4 6·1	4 59·9	+5·1	+5·8	+3·8
	396	Nattam ...	10 13 40	78 14 0	700	14 1 04	3 0·2	3 26·2	4 22·8	+5·2	+6·1	+4·0
	395	Tiruppattūr ...	10 7 10	78 36 0	300	11 1 04	2 54·4	3 19·9	4 14·3	+5·1	+5·9	+3·8
58 K	334	Tiruppuvanam ...	9 49 20	78 15 40	400	28 1 03	2 5·0	2 35·7	3 31·8	+5·2	+6·1	+3·9
	333	Sattirakkudi ...	9 24 0	78 42 10	60	24 1 03	1 4·1	1 33·0	2 25·3	+4·9	+5·8	+3·5
58 L	327	Tuticorin ...	8 48 10	78 9 0	10	16 1 09	0 7·0	0 7·0	1 1·0	+5·0	+6·0	+3·6
	470	Manapadu ...	8 22 20	78 4 0	0	15 4 04	−1 1·1	−0 38·1	0 14·8	+4·9	+5·9	+3·5
58 M	341	Villupuram ...	11 56 40	79 29 50	140	17 2 03	6 23·8	6 53·3	7 46·4	+5·0	+5·6	+3·9
	342	Pondicherry ...	11 56 0	79 49 50	50	19 2 03	7 14·1	7 42·9	8 34·9	+4·9	+5·5	+3·8
	340	Alapākam ...	11 37 10	79 43 10	20	15 2 03	6 13·9	6 42·9	7 34·4	+4·9	+5·5	+3·7
	390	Eranji ...	11 35 50	79 10 20	250	20 12 03	5 35·9	6 1·5	6 55·8	+5·1	+5·8	+3·9
	338	Māyavaram ...	11 5 50	79 38 30	50	6 2 03	5 0·0	5 28·9	6 19·9	+4·9	+5·5	+3·6
58 N	XLVI	TANJORE ...	10 46 40	79 8 20	190	1 2 20	5 24·3	4 31·3	5 24·0	+5·0	+5·7	+3·7
	339	Tirutturaippūndi ...	10 32 20	79 38 10	20	13 2 03	3 36·6	4 4·9	4 54·8	+4·8	+5·4	+3·5
	394	Setabava Chattram ...	10 14 50	79 16 50	0	5 1 04	2 42·3	3 6·8	3 58·4	+4·9	+5·6	+3·6
58 O	XLV	MANDAPAM ...	9 16 50	79 8 30	0	15 1 20	2 15·0	1 24·9	2 14·9	+4·7	+5·5	+3·4
58 P	1377	Mannar ...	8 59 10	79 54 30	10	3 3 13	1 7·5	0 46·6	1 32·2		+5·1	+3·0
	1378	Marichchukaddi ...	8 34 50	79 55 0	20	4 3 13	−0 2·8	−0 23·4	0 21·6		+5·0	+3·0
	1379	Puttalam ...	8 1 38	79 49 0	10	5 3 13	−1 19·0	−1 39·8	−0 55·3		+5·0	+2·9
59 M	1380	Chilaw ...	7 34 20	79 46 50	10	7 3 13	−2 27·3	−2 48·0	−2 5·1		+4·9	+2·7
	1381	Negombo ...	7 12 30	79 49 20	10	10 3 13	−3 27·8	−3 47·9	−3 6·1		+4·8	+2·6
59 N	1398	Colombo ...	6 54 17	79 52 15	10	1 2 13	−4 32·1	−4 51·8	−4 10·6		+4·7	+2·6
62 C	1277	Nochani ...	29 54 20	80 9 40	3000	27 12 09	43 10·7	43 3·5	44 13·2	+5·2	+6·7	+5·9
	1276	Askot ...	29 45 41	80 19 30	3000	22 12 09	42 58·0	42 51·0	44 0·1	+5·1	+6·6	+5·9

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
62 C	1275	Pithoragarh ...	29 35 0	80 12 30	5400	19 12 09	42 35·2	42 28·1	43 37·8	+5·2	+6·7	+5·9
	1274	Lohaghat ...	29 24 20	80 5 30	5500	15 12 09	42 26·0	42 18·9	43 28·6	+5·2	+6·7	+5·9
62 D	596	Shāhgarh ...	28 33 30	80 3 10	650	10 4 04	40 28·7	40 53·6	42 2·2	+5·3	+6·6	+5·8
	594	Chandan Choki ...	28 32 22	80 46 40	600	5 4 04	40 28·9	40 53·3	42 0·8	+5·2	+6·5	+5·7
	595	Khutār ...	28 12 0	80 15 40	600	8 4 04	39 58·4	40 23·3	41 31·9	+5·3	+6·6	+5·8
62 H	LII	KATARNIAN GHAT	28 19 50	81 7 50	600	29 2 20	41 41·7	40 34·4	41 40·8	+5·1	+6·4	+5·6
63 A	593	Lakhimpur ...	27 56 18	80 46 20	450	2 4 04	39 30·8	39 55·8	41 2·8	+5·2	+6·5	+5·6
	592	Kamālpur ...	27 22 30	80 49 40	450	31 3 04	38 36·5	39 1·5	40 7·9	+5·2	+6·4	+5·6
	591	Sanoda ...	27 6 56	80 25 10	500	25 3 04	38 11·1	38 36·5	39 43·5	+5·3	+6·5	+5·6
63 B	582	Araul ...	26 55 0	80 1 40	450	3 3 04	37 52·6	38 18·5	39 26·6	+5·4	+6·6	+5·7
	476	Lucknow ...	26 50 0	80 55 20	400	28 3 04	37 44·5	38 9·5	39 15·4	+5·2	+6·4	+5·5
	LVII	CAWNPORE ...	26 27 0	80 21 0	400	26 2 20	38 33·1	37 25·2	38 32·2	+5·3	+6·5	+5·6
	581	Mālwā ...	26 0 50	80 40 0	380	29 2 04	36 11·7	36 37·1	37 43·5	+5·3	+6·4	+5·6
63 C	578	Atarra ...	25 17 20	80 34 10	430	18 2 04	35 5·7	35 31·7	36 38·1	+5·3	+6·4	+5·6
63 D	616	Ajaigarh ...	24 54 10	80 15 30	650	18 4 05	34 26·5	34 46·5	35 53·5	+5·4	+6·5	+5·6
	579	Sutnā ...	24 34 20	80 50 0	1000	25 4 08	34 13·0	34 17·1	35 22·4	+5·3	+6·3	+5·5
	647	Amāngannj ...	24 25 40	80 2 30	1000	22 4 05	33 12·0	33 32·4	34 39·4	+5·5	+6·5	+5·6
	580	Amdara ...	24 6 10	80 34 40	1210	27 2 04	32 45·9	33 11·3	34 16·6	+5·3	+6·3	+5·5
63 E	517	Nānpāra ...	27 51 40	81 31 10	500	28 3 04	39 21·9	39 46·4	40 51·7	+5·1	+6·3	+5·5
	515	Gondā ...	27 8 30	81 58 20	350	24 3 04	38 21·2	38 45·2	39 49·4	+5·0	+6·2	+5·4
63 F	514	Daryābād ...	26 51 30	81 33 0	350	21 3 04	37 50·2	38 14·7	39 19·5	+5·1	+6·3	+5·4
	477	Rāe-Barelī ...	26 14 0	81 14 40	400	6 11 03	36 23·3	36 50·3	37 55·6	+5·2	+6·3	+5·5
	478	Amethī ...	26 9 20	81 48 40	400	8 11 03	36 28·8	36 55·3	37 59·0	+5·1	+6·2	+5·3
63 G	482	Kunwār ...	25 42 0	81 13 10	340	17 11 03	35 44·8	36 11·3	37 16·6	+5·2	+6·3	+5·5
	481	Allahābād ...	25 27 30	81 49 20	300	1 12 10	35 41·4	35 29·4	36 32·5	+5·1	+6·1	+5·3
	XLIX	MĀNIKPUR ...	25 3 10	81 5 20	800	9 3 20	36 4·2	34 57·8	36 3·1	+5·2	+6·3	+5·5
63 H	892	Sohagi ...	24 59 20	81 42 0	630	9 2 06	34 36·8	34 51·6	35 54·7	+5·1	+6·1	+5·3
	891	Mauganj ...	24 40 50	81 50 40	1200	6 2 06	34 11·3	34 26·1	35 29·2	+5·1	+6·1	+5·3
	893	Rewah ...	24 33 0	81 17 50	1040	14 2 06	33 50·2	34 5·3	35 9·5	+5·2	+6·2	+5·4
	894	Rāmnagar ...	24 11 0	81 8 50	1400	20 2 06	33 17·4	33 32·5	34 36·7	+5·2	+6·2	+5·4
	895	Majholi ...	24 6 47	81 37 0	1200	23 2 06	33 11·6	33 26·4	34 29·5	+5·1	+6·1	+5·3
63 I	516	Tulsipur ...	27 31 30	82 24 40	350	26 3 04	38 52·7	39 16·2	40 19·9	+4·9	+6·2	+5·3
63 J	519	Basti ...	26 49 10	82 46 30	290	31 3 04	37 49·1	38 12·6	39 14·6	+4·9	+6·0	+5·2
	X	FYZĀBĀD ...	26 48 5	82 8 5	330	3 3 20	39 9·2	38 4·6	39 8·3	+5·0	+6·2	+5·3
	513	Mālipur ...	26 16 10	82 38 50	300	19 3 04	36 42·7	37 6·2	38 8·2	+4·9	+6·0	+5·2
63 K	479	Suriāwān ...	25 28 0	82 25 50	300	10 11 03	35 14·2	35 39·2	36 41·2	+4·9	+6·0	+5·2
	480	Chunār ...	25 6 10	82 52 30	300	12 11 03	34 39·4	35 3·9	36 4·8	+4·8	+5·9	+5·1
	890	Lālganj ...	25 1 20	82 22 10	500	2 2 06	34 35·7	34 50·2	35 52·2	+5·0	+6·0	+5·2
63 L	889	Shāhganj ...	24 42 30	82 56 40	1400	25 1 06	34 4·8	34 18·7	35 18·5	+4·8	+5·8	+5·0
	896	Jiawan ...	24 20 20	82 16 20	1200	28 2 06	33 28·6	33 42·6	34 44·6	+5·0	+6·0	+5·2
	897	Naipur ...	24 2 30	82 41 30	900	5 3 06	32 44·3	32 58·0	33 58·3	+4·9	+5·8	+5·1
63 M	521	Uskā Bāzār ...	27 11 30	83 6 20	280	4 4 04	38 37·0	38 59·6	40 1·6	+4·8	+6·0	+5·2
63 N	520	Gorakhpur ...	26 45 0	83 23 20	250	2 4 04	37 38·0	38 0·6	39 1·5	+4·7	+5·9	+5·1
	522	Bhatni ...	26 23 0	83 55 40	250	6 5 08	37 11·7	37 14·6	38 13·9	+4·6	+5·8	+4·9
	524	Azamgarh ...	26 1 50	83 11 10	250	10 4 04	36 13·4	36 36·0	37 36·9	+4·8	+5·9	+5·1
63 O	523	Mau ...	25 56 20	83 34 20	240	8 4 04	36 20·4	36 42·5	37 42·3	+4·7	+5·8	+5·0
	996	Zahūrābād ...	25 44 40	83 43 30	230	1 11 06	36 10·5	36 20·6	37 19·9	+4·6	+5·8	+4·9
	995	Ghāzīpur ...	25 33 50	83 33 20	220					+4·7	+5·8	+5·0
	512	Buxar ...	25 33 30	83 57 40	200	22 11 10	36 5·6	35 54·4	36 53·1	+4·6	+5·7	+4·9
	525	Aunrihar ...	25 32 10	83 9 50	240	13 4 04	35 40·8	36 3·4	37 4·3	+4·8	+5·9	+5·1
	959	Gahmar ...	25 29 0	83 48 10	200	31 10 06	36 5·6	36 15·7	37 15·0	+4·6	+5·8	+4·9
	484	Karmnasa ...	25 14 30	83 25 20	240	22 11 03	34 58·1	35 22·1	36 21·9	+4·7	+5·8	+5·0
63 P	888	Manchee ...	24 39 40	83 25 50	1000	21 1 06	34 10·4	34 24·0	35 23·3	+4·7	+5·8	+4·9
	485	Japla ...	24 32 30	84 0 0	600	23 11 03	34 7·3	34 30·3	35 27·9	+4·5	+5·6	+4·8
	887	Goodhee ...	24 12 40	83 14 30	1000	15 1 06	33 7·8	33 21·9	34 20·6	+4·7	+5·7	+4·9
	886	Meeral ...	24 11 20	83 42 30	1000	11 1 06	32 55·8	33 9·6	34 7·2	+4·6	+5·6	+4·8
64 A	565	Sleemanābād ...	23 36 30	80 16 20	1400	18 1 04	31 42·6	32 9·6	33 15·5	+5·4	+6·4	+5·5
	763	Umariā ...	23 31 10	80 49 10	1520	26 11 04	31 29·4	31 51·1	32 55·3	+5·3	+6·2	+5·4
	782	Churi ...	23 12 40	80 30 0	1900	15 1 05	32 7·0	32 28·6	33 33·9	+5·4	+6·3	+5·5
	783 (a)	Kasai Sonda ...	23 4 50	80 53 50	2300	19 1 05	30 47·8	31 9·0	32 13·2	+5·3	+6·2	+5·4
64 B	790	Kakaria ...	22 48 10	80 15 10	1400	18 2 05	30 3·2	30 24·3	31 29·6	+5·4	+6·3	+5·5

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
64 B	789	Thonda ...	22 27 50	80 38 30	1600	13 2 05	29 44·2	30 4·9	31 9·1	+5·3	+6·2	+5·4
	771	Nainpur ...	22 25 36	80 5 40	1450	15 12 04	29 38·3	30 0·3	31 5·6	+5·5	+6·3	+5·5
64 C	770	Bālāghāt ...	21 48 40	80 12 10	1050	13 12 04	28 21·6	28 43·7	29 48·5	+5·4	+6·3	+5·4
	769	Sālekasa ...	21 17 30	80 30 40	1050	1 4 12	27 55·4	27 34·8	28 38·5	+5·3	+6·2	+5·3
64 D	805	Palasgarh ...	20 39 0	80 17 10	1200	20 4 05	26 13·2	26 33·7	27 37·4	+5·4	+6·2	+5·3
	806	Kosemi ...	20 23 40	80 34 10	1200	23 4 05	25 34·3	25 51·0	26 54·5	+5·3	+6·1	+5·2
	807	Damkassa ...	20 20 30	80 56 10	1400	26 4 05	25 19·6	25 37·8	26 39·3	+5·2	+6·0	+5·1
	1041	Garhchirolī ...	20 11 0	80 0 40	800	16 1 07	25 14·8	25 25·9	26 29·6	+5·4	+6·2	+5·3
64 E	899	Bharatpur ...	23 44 5	81 46 10	1500	13 3 06	32 20·6	32 34·0	33 36·9	+5·1	+6·0	+5·2
	762	Sahdol ...	23 17 0	81 21 50	1520	24 11 04	31 6·3	31 27·6	32 30·7	+5·2	+6·1	+5·3
64 F	784	Dindori ...	22 57 0	81 4 10	2200	22 1 05	29 33·0	29 53·3	30 56·4	+5·2	+6·1	+5·3
	761	Khairi ...	22 55 20	81 52 50	1800	23 4 08	30 39·4	30 42·5	31 43·9	+5·0	+5·9	+5·2
	785	Mādhopur ...	22 45 40	81 25 20	2600	25 1 05	30 14·0	30 34·3	31 36·3	+5·2	+6·0	+5·2
	788	Rajadhar ...	22 14 0	81 2 40	2200	10 2 05	29 8·8	29 29·1	30 32·2	+5·2	+6·1	+5·3
	787	Kamardhā ...	22 0 20	81 13 40	1100	7 2 05	28 53·9	29 14·2	30 16·2	+5·2	+6·0	+5·2
64 G	764	Bhātāpāra ...	21 44 0	81 56 30	890	29 11 04	28 15·3	28 35·8	29 35·6	+5·0	+5·8	+5·0
	786	Bemetara ...	21 43 0	81 31 40	900	4 2 05	28 21·9	28 41·8	29 42·7	+5·1	+5·9	+5·1
	LXIII	RAIPUR ...	21 15 50	81 38 20	970	9 3 20	28 57·9	27 56·6	28 56·9	+5·0	+5·8	+5·1
	768	Rāj-Nāndgaon ...	21 6 10	81 2 20	1010	8 12 04	26 55·8	27 17·1	28 19·1	+5·2	+6·0	+5·2
64 H	766	Rājim ...	20 58 30	81 52 10	800	4 12 04	26 59·1	27 19·6	28 18·8	+5·0	+5·7	+5·0
	767	Dhamtari ...	20 42 40	81 32 40	1050	10 12 09	26 39·9	26 33·8	27 33·6	+5·0	+5·8	+5·0
	942	Sihoa ...	20 18 40	81 54 40	1420	12 12 09	26 10·8	26 5·4	27 3·6	+4·8	+5·7	+4·8
	808	Kānker ...	20 16 10	81 29 50	1300	29 4 05	25 20·1	25 38·7	26 38·5	+5·0	+5·8	+5·0
64 I	898	Goini ...	23 48 0	82 19 20	1500	9 3 06	31 59·5	32 13·5	33 14·4	+5·0	+5·9	+5·1
	900	Ninguani ...	23 18 50	82 0 30	1850	17 3 06	31 15·5	31 29·5	32 30·9	+5·0	+5·9	+5·2
	901	Baikunthpur ...	23 16 20	82 33 0	1700	21 3 06	31 6·5	31 20·2	32 20·0	+4·9	+5·8	+5·0
64 J	902	Matin ...	22 43 50	82 25 0	1500	27 3 06	30 31·5	30 45·2	31 45·0	+4·9	+5·8	+5·0
	760	Belgbana ...	22 25 50	82 2 20	1090	19 11 04	28 51·6	29 12·1	30 12·4	+5·0	+5·8	+5·1
	908	Korba ...	22 20 30	82 42 30	900	30 3 06	29 40·1	29 53·5	30 52·2	+4·8	+5·7	+4·9
	759	Akaltara ...	22 2 10	82 25 40	920	17 11 04	28 45·2	29 4·9	30 4·1	+4·8	+5·7	+5·0
64 K	1038	Pithora ...	21 15 20	82 31 10	1000	28 12 06	27 32·1	27 41·7	28 39·3	+4·8	+5·6	+4·8
	1039	Tumgaon ...	21 11 40	82 7 20	900	30 12 06	27 29·5	27 39·3	28 38·5	+4·9	+5·7	+5·0
64 L	1036	Nawapara ...	20 48 40	82 31 50	900	18 12 06	26 54·0	27 3·6	28 0·1	+4·7	+5·5	+4·7
	1035	Khariar ...	20 17 44	82 46 0	1100	13 12 06	25 34·8	25 44·5	26 39·4	+4·5	+5·4	+4·5
64 M	907	Champa ...	23 13 0	83 45 10	2900	17 4 06	31 9·0	31 21·2	32 17·7	+4·5	+5·5	+4·7
	909	Bisrāmpur ...	23 6 30	83 12 10	1950	24 4 06	30 55·6	31 8·3	32 5·9	+4·7	+5·6	+4·8
64 N	908	Kalnai ...	22 46 30	83 30 20	1900	21 4 06	30 23·5	30 35·7	31 32·2	+4·5	+5·5	+4·7
	904	Dharmjaygarh ...	22 28 10	83 13 20	900	3 4 06	29 50·2	30 2·6	30 59·7	+4·6	+5·6	+4·7
	905	Sikirma ...	22 26 40	83 56 20	1000	9 4 06	29 45·3	29 57·2	30 52·1	+4·4	+5·4	+4·5
64 O	758	Kharsia ...	21 59 40	83 6 20	840	14 11 04	28 49·1	29 8·0	30 4·5	+4·6	+5·5	+4·7
	757	Kanika ...	21 52 30	83 44 20	880	12 11 04	28 39·2	28 57·2	29 52·1	+4·4	+5·4	+4·5
	XI	SAMBALPUR ...	21 27 52	83 58 35	500	6 3 20	28 51·9	27 57·3	28 51·1	+4·3	+5·3	+4·4
	1037	Saraipali ...	21 18 20	83 0 30	900	24 12 06	27 52·3	28 1·5	28 57·5	+4·6	+5·5	+4·6
	1033	Chakerkend ...	21 18 10	83 30 30	600	6 12 06	27 47·8	27 57·0	28 51·9	+4·4	+5·4	+4·5
64 P	938	Sonpur ...	20 50 40	83 54 30	370	23 11 05	26 25·4	26 38·4	27 31·1	+4·2	+5·2	+4·3
	1034	Patnā ...	20 42 20	83 8 20	800	10 12 06	26 14·2	26 23·6	27 18·5	+4·5	+5·4	+4·5
65 A	1042	Jaroundee ...	19 59 40	80 26 20	1000	19 1 07	24 59·9	25 10·9	26 13·5	+5·3	+6·1	+5·2
	1044	Koilibeda ...	19 57 40	80 59 0	1200	26 1 07	24 39·5	24 49·4	25 49·8	+5·1	+5·9	+5·0
	1043	Parlakot ...	19 47 0	80 41 10	1000	22 1 07	24 29·0	24 39·0	25 40·5	+5·2	+6·0	+5·1
	1055	Kumargura ...	19 26 30	80 32 30	700	17 3 07	23 38·3	23 47·8	24 49·3	+5·2	+6·0	+5·1
65 B	1054	Matimurka ...	18 59 30	80 16 50	360	12 3 07	23 1·3	23 11·1	24 13·2	+5·3	+6·1	+5·1
	1050	Vijapur ...	18 47 20	80 49 0	1000	21 2 07	22 15·3	22 24·9	23 24·8	+5·0	+5·9	+4·9
	1053	Madder ...	18 46 20	80 33 10	410	6 3 07	23 5·8	23 15·0	24 16·0	+5·1	+6·0	+5·0
	721	Lankalagada ...	18 40 58	80 7 10	400	15 1 05	21 58·2	22 19·5	23 21·1	+5·3	+6·1	+5·0
	1051	Pothikal ...	18 32 30	80 54 0	400	25 2 07	22 15·3	22 25·1	23 23·9	+5·0	+5·8	+4·8
	722	Nagaram ...	18 20 50	80 25 40	350	18 1 05	21 13·2	21 33·4	22 33·9	+5·1	+6·0	+4·9
	723	Biaram ...	18 3 13	80 44 20	300	22 1 05	20 41·5	21 1·1	22 0·0	+5·0	+5·9	+4·7
65 C	724	Burgampol ...	17 38 25	80 52 10	400	25 1 05	19 36·9	19 56·1	20 53·9	+4·9	+5·8	+4·6
	382	Mānukota ...	17 36 0	80 0 10	500	4 12 03	19 27·4	19 53·5	20 54·6	+5·2	+6·1	+4·9
	383	Bonakālu ...	17 2 0	80 15 50	300	5 12 03	18 33·3	18 59·4	19 58·3	+5·1	+5·9	+4·7
65 D	XLVIII	BEZWĀDA ...	16 31 0	80 36 50	70	19 2 20	18 41·4	17 44·1	18 40·8	+4·9	+5·7	+4·5
	708	Phirangipuram ...	16 17 50	80 15 40	100	12 12 04	16 50·2	17 11·2	18 9·6	+5·1	+5·9	+4·6

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
65 E	1045	Narainpur ...	19 43 10	81 14 50	1800	29 1 07	24 4·6	24 14·3	25 13·6	+5·0	+5·8	+4·9
	1046	Kondagaon ...	19 35 10	81 40 10	1800	2 2 07	24 4·8	24 14·1	25 12·3	+4·8	+5·7	+4·8
	1048	Barsur ...	19 8 10	81 23 20	1000	15 2 07	23 19·2	23 28·8	24 27·0	+4·9	+5·7	+4·8
	1049	Bhairamgarh ...	19 0 30	81 2 40	1000	18 2 07	22 56·4	23 6·2	24 5·0	+5·0	+5·8	+4·8
65 F	1047	Kinepal ...	18 58 36	81 36 40	1800	12 2 07	23 3·7	23 13·0	24 10·7	+4·8	+5·7	+4·7
	955	Thakawada ...	18 44 30	81 48 30	1000	9 4 06	22 29·6	22 42·6	23 38·7	+4·6	+5·6	+4·5
	957	Malkanagiri ...	18 21 50	81 53 30	700	16 4 06	21 32·7	21 45·9	22 41·4	+4·5	+5·5	+4·5
	1052	Chintulnar ...	18 20 50	81 11 10	700	1 3 07	21 41·1	21 49·8	22 47·5	+4·8	+5·7	+4·7
65 G	958	Pusigudiam ...	17 53 0	81 31 10	300	22 4 06	20 16·2	20 28·9	21 25·0	+4·6	+5·6	+4·5
	725	Dummapett ...	17 17 17	81 0 10	200	28 1 05	19 1·7	19 20·0	20 16·7	+4·8	+5·7	+4·5
	705	Rājahmundry ...	17 0 35	81 46 20	50	3 12 04	18 38·7	18 56·7	19 50·1	+4·4	+5·4	+4·2
65 H	706	Bhīmadōl ...	16 48 40	81 15 30	40	5 12 04	17 59·8	18 19·2	19 13·7	+4·7	+5·5	+4·3
	707	Masulipatam ...	16 11 30	81 7 40	0	8 12 04	16 59·9	17 19·2	18 13·2	+4·7	+5·5	+4·2
65 I	943	Raigarh ...	19 53 20	82 4 20	2150	16 12 09	25 8·9	25 2·5	25 59·6	+4·7	+5·6	+4·7
	952	Junāgarh ...	19 51 53	82 56 10	700	25 3 06	24 35·6	24 48·0	25 42·4	+4·4	+5·4	+4·4
	953	Jamgaon or Jaipatna...	19 28 10	82 48 20	1200	28 3 06	23 44·9	23 57·7	24 51·5	+4·4	+5·3	+4·4
	944	Dabgaon ...	19 27 0	82 24 40	1940	18 12 09	24 8·6	24 3·5	24 58·4	+4·5	+5·4	+4·5
	954	Jagdalpur ...	19 5 40	82 1 40	1830	2 4 06	22 50·6	23 3·7	23 59·2	+4·6	+5·5	+4·5
65 J	945	Jeypore ...	18 51 34	82 34 40	1940	21 12 09	22 55·7	22 50·7	23 44·0	+4·3	+5·3	+4·3
	956	Govindpilli ...	18 34 50	82 17 0	900	12 4 06	21 54·6	22 6·7	23 1·1	+4·4	+5·4	+4·4
	946	Padwa ...	18 22 20	82 40 40	3000	5 3 06	21 29·5	21 40·8	22 33·6	+4·2	+5·3	+4·2
65 K	1058	Kodasanta ...	17 46 3	82 33 40	500	7 4 07	19 55·9	20 2·6	20 54·3	+4·2	+5·2	+4·1
	703	Tuni ...	17 21 30	82 32 10	60	30 11 04	19 15·4	19 31·3	20 22·5	+4·1	+5·2	+4·0
65 L	704	Cocanāda (Port) ...	16 56 20	82 14 10	10	1 12 04	18 21·1	18 38·3	19 30·0	+4·2	+5·2	+4·1
65 M	951	Dadpur ...	19 58 40	83 14 10	850	23 3 06	24 45·1	24 56·8	25 50·1	+4·3	+5·3	+4·3
	950	Tikirapara ...	19 37 40	83 29 20	2500	19 3 06	24 2·3	24 12·8	25 5·0	+4·2	+5·2	+4·2
	1061	Sirgudi ...	19 25 20	83 49 0	700	19 4 07	23 43·0	23 50·2	24 41·3	+4·0	+5·1	+4·1
	949	Rāyagada ...	19 9 50	83 24 40	200	15 3 06	23 5·7	23 16·0	24 7·1	+4·1	+5·1	+4·1
	1060	Jugganatpoorum ...	19 1 50	83 46 30	28c	16 4 07	22 56·2	23 0·7	23 50·7	+4·0	+5·0	+4·0
65 N	948	Bobbili ...	18 34 30	83 21 10	400	30 12 09	22 16·6	22 11·1	23 1·7	+4·0	+5·1	+4·0
	701	Chicacole Road ...	18 24 30	83 54 20	100	25 11 04	21 29·6	21 44·2	22 33·1	+3·9	+4·9	+3·9
	947	Raiawalsa ...	18 13 50	83 1 30	3000	7 3 06	21 3·0	21 14·2	22 5·9	+4·0	+5·2	+4·1
	702	Vizianagram ...	18 6 40	83 24 0	200	31 12 09	22 17·0	22 12·3	23 1·8	+3·9	+5·0	+3·9
65 O	XII	WALTAIR ...	17 42 23	83 17 44	10	22 2 20	21 38·1	20 48·0	21 37·5	+3·9	+5·0	+3·9
66 A	385	Bāpatla ...	15 54 30	80 27 40	30	9 12 03	16 23·6	16 49·0	17 45·2	+5·0	+5·7	+4·4
	386	Ongole ...	15 30 20	80 3 20	40	10 12 03	13 43·4	14 8·4	15 5·7	+5·1	+5·8	+4·5
66 C	388	Arambakkam ...	13 32 40	80 4 30	40	13 12 03	10 47·7	11 13·3	12 6·9	+5·0	+5·6	+4·0
	XXXVII	PERAMBŪR ...	13 6 40	80 15 0	10	5 2 20	11 13·9	10 21·6	11 13·5	+4·9	+5·4	+3·9
67 C	1375	Jaffna ...	9 39 25	80 0 40	10	27 2 13	2 26·3	2 4·0	2 51·2		+5·2	+3·2
	1376	Elephant Pass ...	9 31 17	80 24 20	10	28 2 13	2 9·4	1 48·0	2 32·4		+4·9	+3·0
	1373	Mullaittivu ...	9 16 13	80 48 50	10	25 2 13	1 16·6	0 57·0	1 39·2		+4·7	+2·8
	1374	Mankulam ...	9 7 39	80 27 0	170	26 2 13	1 59·0	1 37·9	2 21·8		+4·9	+2·9
67 D	1372	Vavuniya ...	8 45 30	80 30 20	290	24 2 13	1 1·5	0 41·5	1 24·3		+4·8	+2·8
	1367	Horowupotana ...	8 33 10	80 49 50	290	17 2 13	−0 9·3	−0 27·7	0 12·3		+4·5	+2·6
	1366	Anuradhapura ...	8 21 10	80 23 10	280	17 2 13	−0 30·7	−0 49·9	−0 8·2		+4·7	+2·7
	1369	Alutoya ...	8 13 15	80 54 0	300	20 2 13	−1 2·1	−1 20·8	−0 41·9		+4·4	+2·5
	1395	Kekirawa ...	8 2 8	80 36 20	450	1 4 13	−1 20·3	−1 39·5	−0 59·5		+4·5	+2·6
	1365	Galgamuwa ...	8 0 50	80 16 0	280	15 2 13	−1 30·1	−1 49·9	−1 8·2		+4·7	+2·7
67 H	1368	Trincomalee ...	8 34 40	81 14 10	0	18 2 13	−0 4·6	−0 22·1	−0 16·2		+4·3	+2·5
68 A	1371	Dambulla ...	7 52 40	80 39 20	530	22 2 13	−3 31·9	−3 50·8	−3 11·3		+4·5	+2·5
	1396	Nālanda ...	7 40 10	80 38 20	830	2 4 13	−2 13·3	−2 33·1	−1 53·6		+4·5	+2·5
	1364	Kurunegala ...	7 28 50	80 21 50	400	14 2 13	−2 40·3	−2 59·6	−2 20·1		+4·5	+2·5
	1397	Nugatenni ...	7 18 0	80 51 20	2910	2 4 13	−3 4·9	−3 23·0	−2 45·7		+4·3	+2·3
	1382	Kandy ...	7 17 40	80 37 40	1680	13 3 13	−2 37·0	−2 55·9	−2 17·5		+4·4	+2·4
	1362	Yatiyantota ...	7 2 0	80 17 20	110	9 2 13	−3 35·8	−3 54·3	−3 14·8		+4·5	+2·5
68 B	1383	Nuwara Eliya ...	6 57 39	80 46 20	6190	15 3 13	−4 1·1	−4 20·1	−3 43·4		+4·2	+2·3
	1384	Haputale ...	6 46 0	80 57 50	4730	20 3 13	−4 24·0	−4 41·0	−4 5·4		+4·1	+2·2
	1363	Ratnapura ...	6 41 40	80 24 20	100	10 2 13	−4 24·3	−4 42·9	−4 5·0		+4·4	+2·3
	1357	Bentota ...	6 25 50	80 0 10	10	2 2 13	−5 4·4	−5 22·8	−4 43·8		+4·5	+2·4
	1360	Deniyaya ...	6 21 20	80 33 40	1360	5 2 13	−5 17·3	−5 35·3	−4 59·1		+4·2	+2·2
	LXXV	GALLE ...	6 1 50	80 12 10	10	24 1 20	−5 45·3	−6 22·8	−5 45·5		+4·3	+2·3
68 C	1359	Matara ...	5 57 50	80 33 10	10	4 2 13	−6 12·8	−6 30·2	−5 55·1		+4·1	+2·1
68 E	1370	Topa Wewa ...	7 56 37	81 0 10	300	21 2 13	−1 35·9	−1 54·2	−1 16·4		+4·3	+2·4

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and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
68 E	1393	Kalcudah ...	7 55 20	81 34 50	10	28 3 13	−1 54·2	−2 10·8	−1 35·3		+4·0	+2·3
	1389	Batticaloa ...	7 42 31	81 42 40	10	25 3 13	−2 16·8	−2 33·0	−1 58·6		+3·9	+2·2
	1394	Mahaoya ...	7 32 4	81 21 20	200	29 3 13	−2 44·4	−3 1·8	−2 26·8		+4·0	+2·2
	1392	Kalmunai ...	7 24 50	81 50 40	10	27 3 13	−2 47·4	−3 3·2	−2 29·9		+3·8	+2·1
	1388	Bibile ...	7 9 28	81 14 10	800	24 3 13	−3 22·4	−3 39·3	−3 4·3		+4·0	+2·2
	1391	Tirukovil ...	7 7 50	81 52 10	10	27 3 13	−3 50·7	−4 7·0	−3 34·8		+3·7	+2·0
68 F	1390	Pottuvil ...	6 52 30	81 50 30	10	26 3 13	−4 4·7	−4 20·0	−3 47·8		+3·7	+2·0
	1387	Muppane ...	6 51 50	81 21 30	490	23 3 13	−3 49·8	−4 6·0	−3 32·1		+3·9	+2·1
	1385	Tanamalwila ...	6 25 52	81 8 10	23c	21 3 13	−5 6·6	−5 23·2	−4 49·3		+3·9	+2·1
	1386	Kirinde ...	6 13 9	81 20 50	2c	22 3 13	−5 35·5	−5 52·7	−5 19·9		+3·8	+2·0
	1361	Ambalantota ...	6 7 14	81 1 40	10	6 2 13	−5 44·2	−6 1·0	−5 27·6		+3·9	+2·0
72 B	LIII	BETTIAH ...	26 48 50	84 31 30	240	7 11 19	39 4·8	38 6·8	39 5·5	+4·5	+5·7	+4·9
	529	Pipra ...	26 29 30	84 59 10	200	20 4 04	37 21·4	37 42·1	38 39·2	+4·4	+5·6	+4·7
	526	Siwān ...	26 12 30	84 20 40	200	14 4 04	36 38·1	36 59·3	37 57·5	+4·5	+5·7	+4·8
72 C	999	Ekma ...	25 58 10	84 32 10	200	7 11 06	37 21·8	37 31·7	38 29·9	+4·5	+5·7	+4·8
	527	Chāpra ...	25 48 10	84 43 20	20c	2 2 11	36 57·3	36 45·7	37 42·8	+4·4	+5·6	+4·7
	997 (*a*)	Ballia ...	25 45 10	84 10 10	20c	21 2 11	37 7·1	36 54·7	37 52·9	+4·5	+5·7	+4·8
	960	Dumraon ...	25 34 40	84 7 30	26c	7 12 10	36 17·0	36 5·8	37 4·0	+4·5	+5·7	+4·8
	1064	Arrah ...	25 33 0	84 40 20	19c	3 11 06	35 45·8	35 55·5	36 52·6	+4·4	+5·6	+4·7
	1063	Ghoorsaree ...	25 22 30	84 9 10	22c	1 11 06	35 36·6	35 46·5	36 44·7	+4·5	+5·7	+4·8
	511	Jahānābād ...	25 13 40	84 59 50	22c	13 3 04	34 55·1	35 15·7	36 11·7	+4·3	+5·5	+4·6
72 D	487	Palmerganj ...	24 51 40	84 19 50	300	28 11 03	34 34·7	34 57·7	35 54·8	+4·5	+5·6	+4·7
	XIV	GAYĀ ...	24 47 7	84 59 47	40c	3 11 19	35 22·9	34 27·6	35 23·6	+4·3	+5·5	+4·6
	881	Imāmganj ...	24 27 20	84 34 50	60o	15 12 05	33 26·6	33 39·8	34 35·8	+4·4	+5·5	+4·6
	882	Chatrā ...	24 12 10	84 53 0	140c	19 12 05	32 50·7	33 3·6	33 58·5	+4·3	+5·4	+4·5
	486 (*a*)	Daltonganj ...	24 2 10	84 3 40	70c	20 3 09	32 53·6	32 51·5	33 48·6	+4·5	+5·6	+4·7
72 F	531	Bairagnia ...	26 43 50	85 16 30	28c	25 4 04	38 0·6	38 20·8	39 17·9	+4·3	+5·6	+4·7
	528	Muzaffarpur ...	26 6 30	85 22 30	17c	19 4 04	36 36·2	36 56·4	37 52·4	+4·3	+5·5	+4·6
	534	Darbhangā ...	26 6 0	85 54 20	17o	2 5 04	36 49·6	37 9·3	38 4·2	+4·2	+5·4	+4·5
72 G	998	Dighwāra ...	25 44 30	85 0 40	170	5 11 06	36 4·6	36 14·3	37 11·4	+4·4	+5·6	+4·7
	510	Patna ...	25 35 30	85 12 20	17c	11 3 04	35 28·3	35 48·9	36 44·9	+4·3	+5·5	+4·6
	509	Bārh ...	25 28 20	85 42 50	150	9 3 04	35 42·1	36 2·3	36 57·2	+4·2	+5·4	+4·5
72 H	488	Nawāda ...	24 52 30	85 32 50	500	30 11 03	34 9·2	34 30·6	35 24·4	+4·2	+5·3	+4·4
	877	Ganwan ...	24 37 10	85 55 20	700	21 11 05	34 0·5	34 13·2	35 5·9	+4·1	+5·2	+4·3
	880	Chorpāran ...	24 22 30	85 15 40	1340	11 12 05	33 32·8	33 45·8	34 39·6	+4·2	+5·3	+4·4
	878	Bagodar ...	24 4 50	85 49 30	1250	25 11 05	33 5·2	33 17·9	34 10·1	+4·1	+5·2	+4·2
72 J	533	Nirmali ...	26 18 0	86 34 0	180	29 4 04	36 56·6	37 15·9	38 9·7	+4·1	+5·3	+4·4
72 K	844	Madhipurā ...	25 55 40	86 47 30	140	27 1 06	36 29·0	36 40·9	37 33·6	+4·1	+5·2	+4·3
	L	MONGHYR ...	25 23 10	86 27 50	150	10 11 19	36 22·5	35 30·4	36 23·1	+4·1	+5·2	+4·3
	490	Bhāgalpur ...	25 14 0	86 57 40	150	4 12 03	35 3·0	35 23·4	36 14·5	+4·0	+5·1	+4·1
72 L	508	Gidhaur ...	24 52 20	86 18 0	900	23 1 04	34 13·3	34 33·4	35 25·6	+4·1	+5·2	+4·2
	507	Baidyanāth ...	24 30 50	86 38 0	100c	21 1 04	33 34·5	33 54·1	34 45·2	+4·0	+5·1	+4·1
	876	Deogarh ...	24 29 0	86 41 0	100c	16 11 05	33 46·6	33 59·0	34 49·5	+4·0	+5·0	+4·1
	506	Giridih ...	24 10 50	86 19 20	1000	30 3 11	33 19·7	33 8·2	33 59·3	+4·0	+5·1	+4·1
72 N	532	Khanwaghat ...	26 22 10	87 3 20	180	28 4 04	37 12·1	37 30·9	38 23·6	+4·0	+5·2	+4·3
	842	Kishanganj ...	26 5 50	87 56 50	160	22 1 06	36 36·6	36 47·9	37 38·4	+3·9	+5·0	+4·1
72 O	843	Purnea ...	25 46 30	87 31 10	120	25 1 06	36 25·0	36 36·3	37 26·8	+3·9	+5·0	+4·1
	841	Bārsoi ...	25 38 50	87 55 40	11c	20 1 06	36 12·2	36 23·6	37 13·0	+3·8	+4·9	+4·0
	491	Sāhibganj ...	25 14 50	87 38 20	11c	6 12 03	34 57·0	35 16·4	36 5·8	+3·8	+4·9	+4·0
72 P	675	Goddā ...	24 50 20	87 12 30	1000	12 11 05	34 40·2	34 52·3	35 41·7	+3·9	+4·9	+4·0
	492	Pākaur ...	24 38 50	87 51 40	100	8 12 03	33 49·8	34 8·7	34 55·9	+3·7	+4·7	+3·8
	874	Dumkā ...	24 15 45	87 14 40	1000	20 2 11	33 38·4	33 28·2	34 16·5	+3·8	+4·8	+3·9
73 A	883	Balumath ...	23 50 10	84 47 40	1600	22 12 05	32 20·5	32 33·4	33 28·3	+4·3	+5·4	+4·5
	885	Lātehār ...	23 45 10	84 29 50	124c	29 12 05	32 16·0	32 29·2	33 24·6	+4·4	+5·4	+4·6
	884	Lohārdagā ...	23 25 30	84 41 10	220c	24 12 05	31 26·6	31 39·5	32 34·4	+4·3	+5·4	+4·5
73 B	906	Jashpur ...	22 52 40	84 8 30	257c	11 4 06	30 43·2	30 55·1	31 50·0	+4·4	+5·4	+4·5
	1032	Kolebira ...	22 42 20	84 42 0	190c	25 11 06	30 28·4	30 37·2	31 31·0	+4·2	+5·3	+4·4
	755	Rourkela ...	22 13 40	84 51 30	65c	9 11 04	29 17·0	29 33·8	30 26·0	+4·1	+5·2	+4·2
	756	Bāmrā ...	22 3 30	84 17 30	86c	11 11 04	29 11·7	29 29·3	30 23·1	+4·3	+5·3	+4·4
73 C	1166	Bonaigarh ...	21 49 0	84 57 30	50c	18 12 07	28 53·5	28 57·6	29 48·7	+4·1	+5·1	+4·1
	1165	Boraghat ...	21 31 35	84 33 30	80c	12 12 07	28 14·7	28 19·3	29 11·5	+4·1	+5·2	+4·2
	937	Charmal ...	21 6 20	84 12 50	60c	18 11 05	27 7·2	27 20·2	28 12·4	+4·2	+5·2	+4·2
73 D	936	Hondapa ...	20 56 30	84 42 10	40c	15 11 05	26 42·1	26 54·5	27 45·6	+4·0	+5·1	+4·1
	939	Bisapara ...	20 24 50	84 12 30	160o	1 12 05	25 33·0	25 45·8	26 36·9	+4·1	+5·1	+4·1
	941	Daspallā ...	20 18 40	84 54 0	40c	9 12 05	25 27·8	25 39·8	26 28·7	+3·9	+4·9	+3·9
	940	Mojagodo ...	20 1 10	84 31 0	400	5 12 05	24 50·4	25 2·5	25 52·5	+3·9	+5·0	+4·0

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
73 E	879	Hazāribāgh ...	23 59 40	85 22 10	2000	28 11 05	32 38·3	32 51·3	33 45·1	+4·2	+5·3	+4·4
	1030	Kānchī ...	23 22 40	85 19 30	2160	18 11 06	31 52·4	32 1·0	32 53·7	+4·1	+5·2	+4·3
	1029	Silli ...	23 21 10	85 80 40	880	13 11 06	32 0·5	32 8·9	33 0·6	+4·6	+5·1	+4·1
	1031	Jeria ...	23 2 40	85 1 0	2100	22 11 06	31 4·4	31 13·2	32 5·9	+4·2	+5·2	+4·3
73 F	LI	SINI ...	22 47 0	85 56 50	700	2 3 20	31 14·7	30 24·0	31 14·0	+3·9	+5·0	+4·0
	1178	Chaibāsa ...	22 32 30	85 48 30	750	15 1 08	30 9·3	30 13·0	31 3·0	+4·0	+5·0	+4·0
	754	Goilkera ...	22 30 20	85 21 30	1000	8 11 04	29 38·5	29 55·7	30 46·8	+4·1	+5·1	+4·1
	1172	Jaintigarh ...	22 4 10	85 40 40	1230	11 1 08	29 8·2	29 12·0	30 2·0	+3·9	+5·0	+4·0
73 G	1171	Keonjhar ...	21 37 40	85 35 30	1200	7 1 08	28 14·1	28 17·4	29 6·3	+3·9	+4·9	+3·9
	1167	Pāl Laharā ...	21 25 50	85 11 30	700	21 12 07	27 50·9	27 55·1	28 45·1	+4·0	+5·0	+4·0
	1170	Gutgaon ...	21 24 10	85 53 20	500	3 1 08	27 52·2	27 55·9	28 43·7	+3·8	+4·8	+3·8
	1169	Kantolo ...	21 7 20	85 37 40	600	30 12 07	27 53·8	27 57·8	28 46·1	+3·9	+4·8	+3·9
73 H	1168	Tālcher ...	20 57 10	85 14 30	200	25 12 07	27 1·6	27 5·6	27 54·5	+3·9	+4·9	+3·9
	935	Rasul ...	20 37 20	85 19 10	400	10 11 05	26 5·0	26 16·8	27 5·1	+3·9	+4·8	+3·9
	695	Cuttack ...	20 27 20	85 53 50	90	13 11 04	25 33·8	25 49·0	26 35·1	+3·7	+4·6	+3·7
	697	Tāpang ...	20 3 20	85 34 50	50	17 11 04	25 5·0	25 18·8	26 4·9	+3·7	+4·6	+3·7
73 I	873	Jāmtāra ...	23 58 40	86 48 50	700	2 3 11	33 14·4	33 3·7	33 53·1	+3·9	+4·9	+4·0
	505	Kātrāsgarh ...	23 48 0	86 18 0	800	4 12 10	32 45·5	32 35·4	33 25·9	+4·0	+5·0	+4·1
	501	Purūlia ...	23 19 30	86 22 50	800	5 1 04	31 14·2	31 33·7	32 23·1	+3·9	+4·9	+4·0
73 J	499	Ghātsila ...	22 35 0	86 28 20	400	1 1 04	30 9·9	30 28·9	31 17·2	+3·8	+4·8	+3·9
	1174	Rairangpur ...	22 15 21	86 11 0	1000	18 1 08	29 45·3	29 49·0	30 37·3	+3·9	+4·8	+3·9
73 K	1176	Baripādā ...	21 55 50	86 43 0	200	29 1 08	29 6·2	29 9·3	29 55·4	+3·7	+4·6	+3·7
	1175	Kusmi ...	21 50 0	86 15 10	1500	25 1 08	28 14·4	28 17·8	29 5·0	+3·8	+4·7	+3·8
	LIX	BALASORE ...	21 30 30	86 54 40	50	27 2 20	28 56·4	28 10·8	28 55·8	+3·7	+4·5	+3·6
	693	Bhadrakh ...	21 5 10	86 31 0	50	10 11 04	27 1·9	27 17·1	28 2·1	+3·7	+4·5	+3·6
73 L	694	Jenapur ...	20 51 30	86 4 10	100	12 11 04	26 46·3	27 1·5	27 47·6	+3·7	+4·6	+3·7
	1180	Chāndbali ...	20 46 10	86 43 40	20	19 2 08	26 42·4	26 45·4	27 29·3	+3·6	+4·4	+3·5
	1179	Balikuda ...	20 8 30	86 16 10	50	12 2 08	25 8·9	25 11·7	25 56·2	+3·6	+4·5	+3·5
73 M	494	Sainthia ...	23 56 50	87 41 20	170	2 5 08	32 53·8	32 56·0	33 42·1	+3·7	+4·6	+3·7
	504	Rāniganj ...	23 35 30	87 7 30	300	20 1 11	32 10·6	32 0·4	32 47·6	+3·8	+4·7	+3·8
	495	Burdwān ...	23 15 0	87 52 40	100	16 12 03	31 16·5	31 34·5	32 18·9	+3·6	+4·4	+3·6
	502	Bānkurā ...	23 13 30	87 4 10	400	10 1 04	31 17·8	31 36·8	32 24·0	+3·8	+4·7	+3·8
73 N	503	Garbeta ...	22 50 40	87 18 50	300	13 1 04	31 4·4	31 22·9	32 9·0	+3·7	+4·6	+3·7
	498	Midnapore ...	22 25 20	87 17 30	200	30 12 03	29 50·7	30 9·2	30 54·2	+3·7	+4·5	+3·6
73 O	1177	Dāntān ...	21 56 10	87 16 40	80	1 2 08	29 10·0	29 13·1	29 57·5	+3·6	+4·4	+3·6
	1178	Contai ...	21 46 40	87 44 30	40	4 2 08	28 29·7	28 32·8	29 15·0	+3·5	+4·2	+3·4
74 A	1062	Govindpur ...	19 29 50	84 25 20	300	30 4 07	23 53·8	23 59·8	24 48·7	+3·9	+4·9	+3·9
	LX	BERHAMPUR (Ganjām) ...	19 18 10	84 48 40	80	24 2 20	24 24·8	23 36·4	24 24·2	+3·8	+4·8	+3·8
74 B	1059	Parlakimedi ...	18 47 10	84 5 0	300	12 4 07	22 27·5	22 34·2	23 23·1	+3·9	+4·9	+3·9
	700	Palasa ...	18 45 20	84 26 0	80	23 11 04	22 14·4	22 30·0	23 17·8	+3·8	+4·8	+3·8
74 E	696	Purī ...	19 48 40	85 50 10	20	15 11 04	24 26·4	24 40·1	25 25·1	+3·7	+4·5	+3·6
	698	Rambha ...	19 32 0	85 6 0	30	19 11 04	23 56·0	24 11·6	24 58·3	+3·8	+4·7	+3·7
78 B	XIII	DARJEELING ...	26 59 42	88 16 56	8100	15 11 19	39 15·7	38 25·7	39 16·2	+3·9	+5·0	+4·1
	839	Siliguri ...	26 42 20	88 26 10	390	16 1 06	37 54·5	38 5·9	38 55·3	+3·8	+4·9	+4·0
	1001	Tariya ...	26 15 40	88 23 40	200	14 11 06	36 49·2	36 57·2	37 46·0	+3·8	+4·8	+4·0
	838	Chilhāti ...	26 14 30	88 48 10	210	14 1 06	36 59·6	37 10·7	37 57·9	+3·7	+4·7	+3·8
78 C	1000	Ranisankail ...	25 54 8	88 15 10	150	11 11 06	36 29·0	36 37·0	37 25·3	+3·8	+4·8	+3·9
	836	Pārbatīpur ...	25 39 10	88 55 10	110	12 12 08	36 18·9	36 19·4	37 5·5	+3·6	+4·6	+3·7
	840	Radhikāpur ...	25 38 30	88 26 50	110	18 1 06	36 9·5	36 20·6	37 7·8	+3·7	+4·7	+3·8
78 D	829	Bulbulchundī ...	24 58 50	88 14 30	100	23 12 05	34 59·6	35 10·7	35 56·8	+3·7	+4·6	+3·7
	LXV	SANTAHAR ...	24 48 10	88 59 20	50	19 11 19	35 11·3	34 28·4	35 11·7	+3·5	+4·3	+3·5
	828	Nawābganj ...	24 35 40	88 16 0	100	20 12 05	34 7·8	34 18·9	35 5·0	+3·7	+4·6	+3·7
	830	Mālāñchi ...	24 18 40	88 57 50	50	28 12 05	33 45·8	33 56·3	34 38·5	+3·5	+4·2	+3·4
	493	Azīmganj ...	24 14 10	88 15 10	100	10 12 03	33 13·2	33 31·6	34 16·6	+3·6	+4·5	+3·6
78 F	845	Banarhat ...	26 47 31	89 1 20	400	1 2 06	38 15·9	38 26·6	39 14·3	+3·7	+4·7	+3·9
	835	Jainti ...	26 41 24	89 36 30	500	8 1 06	38 22·7	38 33·5	39 19·6	+3·6	+4·6	+3·7
	834	Cooch Behār ...	26 18 30	89 26 20	160	5 1 06	37 16·4	37 27·2	38 12·2	+3·6	+4·5	+3·6
	846	Dhubrighāt ...	26 1 2	89 59 50	100	3 2 06	36 30·5	36 40·4	37 22·6	+3·4	+4·2	+3·4
78 G	833	Kaunia ...	25 47 10	89 25 0	100	3 1 06	36 27·7	36 38·2	37 22·6	+3·5	+4·4	+3·6
	LXXVI	PHULCHARI ...	25 11 40	89 37 0	50	11 4 20	36 9·8	35 27·2	36 8·9	+3·4	+4·2	+3·3
	837	Panchabibi ...	25 11 30	89 1 40	80	12 1 06	35 11·7	35 22·5	36 6·9	+3·6	+4·4	+3·6

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation.	Value corrected to date.	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
78 H	821	Jagannāthganj ...	24 41 10	89 45 50	40	3 12 05	34 18·4	34 28·6	35 8·6	+3·3	+4·0	+3·2
	822	Porabari ...	24 13 17	89 51 30	30	5 12 05	33 23·6	33 33·5	34 11·3	+3·2	+3·8	+3·0
78 J	1002	Cherpanguri ...	26 33 2	90 8 10	300	22 11 06	37 51·0	37 58·4	38 41·7	+3·5	+4·3	+3·5
	1003	Bijni ...	26 28 50	90 42 10	300	30 11 06	37 25·3	37 32·2	38 13·3	+3·3	+4·1	+3·3
	847	Goālpāra ...	26 11 10	90 37 40	140	6 2 06	36 46·9	36 56·5	37 37·0	+3·3	+4·0	+3·3
78 K	1009	Rongrenggiri ...	25 33 0	90 33 20	2000	3 1 07	35 40·1	35 46·5	36 25·4	+3·2	+3·9	+3·1
	1008	Nongsobal ...	25 32 8	90 52 50	1000	29 12 06	35 30·9	35 37·1	36 13·8	+3·1	+3·7	+2·9
	1010	Damalgiri ...	25 31 40	90 6 50	500	9 1 07	36 8·7	36 15·3	36 55·3	+3·3	+4·0	+3·2
	1011	Nalitābāri ...	25 5 10	90 11 10	50	14 1 07	34 38·7	34 45·3	35 24·2	+3·3	+3·9	+3·1
78 L	1012	Asma ...	24 54 10	90 53 20	50	20 1 07	34 41·1	34 47·1	35 22·2	+3·0	+3·6	+2·7
	820	Mymensingh ...	24 46 0	90 23 40	50	25 1 11	34 47·0	34 38·5	35 15·2	+3·2	+3·7	+2·9
	819	Sripur ...	24 12 50	90 29 0	50	30 11 05	33 16·0	33 25·6	34 0·1	+3·1	+3·5	+2·7
78 N	1005	Jiabor ...	26 43 33	91 42 30	400	8 12 06	38 2·6	38 9·1	38 46·9	+3·1	+3·8	+3·0
	1004	Katacharkuchi ...	26 30 40	91 14 10	170	4 12 06	37 49·2	37 55·9	38 34·8	+3·2	+3·9	+3·1
	848	Kholabanda ...	26 10 0	91 8 16	130	8 2 06	36 57·2	37 6·5	37 44·9	+3·2	+3·9	+3·0
	LXXVII	PALĀSBĀRI ...	26 7 40	91 32 40	150	19 4 20	37 44·5	37 7·0	37 43·7	+3·1	+3·7	+2·9
78 O	863	Shillong ...	25 35 4	91 53 40	4900	23 3 06	35 38·0	35 46·1	36 19·0	+2·9	+3·4	+2·5
	1007	Maokersa ...	25 31 10	91 25 0	5000	22 12 06	35 10·2	35 16·2	35 50·7	+3·0	+3·5	+2·7
	1014	Sunāmganj ...	25 4 10	91 23 30	40	28 1 07	34 54·7	35 0·4	35 33·8	+3·0	+3·4	+2·6
78 P	1015	Sylhet ...	24 53 0	91 52 0	40	1 2 07	34 40·0	34 45·3	35 16·0	+2·8	+3·2	+2·3
	1013	Ajmiriganj or Abidābād	24 33 50	91 14 10	50	25 1 07	34 5·3	34 10·8	34 43·1	+2·9	+3·3	+2·5
	868	Tilāgāon ...	24 26 40	91 57 30	50	11 4 06	33 49·4	33 56·7	34 25 2	+2·7	+3·0	+2·1
	869	Shāistāganj ...	24 16 50	91 26 10	30	13 4 06	33 30·3	33 37·9	34 8·6	+2·8	+3·2	+2·3
	1182	Singurajabari ...	24 7 57	91 53 50	900	20 3 08	33 16·7	33 18·9	33 47·4	+2·7	+3·0	+2·1
79 A	827	Plassey ...	23 46 20	88 17 10	40	15 12 05	32 5·4	32 16·2	33 0·1	+3·6	+4·4	+3·5
	825	Chuādānga ...	23 38 40	88 51 40	40	11 12 05	32 13·2	32 23·7	33 4·8	+3·4	+4·1	+3·3
	826	Krishnagar ...	23 22 39	88 29 10	30	14 12 05	31 44·1	31 55·0	32 36·7	+3·5	+4·2	+3·3
	811	Bangong ...	23 1 50	88 50 20	20	10 11 05	30 57·4	31 7·9	31 47·9	+3·4	+4·0	+3·2
79 B	LXXIV	BARRACKPORE ...	22 46 29	88 21 39	20	...	...	...	...	...	...	...
		BARRACKPORE OBSERVATORY ...	22 46 29	88 21 39	20	15 3 20	31 18·0	30 36·0	31 17·3	+3·5	+4·2	+3·3
	496	Calcutta ...	22 33 40	88 17 30	20	23 12 03	29 56·7	30 14·2	30 55·3	+3·5	+4·1	+3·3
	497	Ulubāria ...	22 28 20	88 6 20	20	28 12 03	29 41·0	29 58·5	30 39·6	+3·5	+4·1	+3·3
	810	Canning ...	22 18 20	88 39 50	10	7 11 05	29 35·2	29 46·1	30 25·0	+3·4	+3·9	+3·1
	809	Diamond Harbour ...	22 11 20	88 11 40	10	6 11 05	29 12·3	29 23·5	30 3·5	+3·5	+4·0	+3·2
79 E	824	Kumār Khāli ...	23 51 50	89 14 0	40	10 12 05	32 32·7	32 43·2	33 23·2	+3·4	+4·0	+3·2
	823	Farīdpur ...	23 37 10	89 51 10	20	7 12 05	32 8·2	32 18·1	32 54·3	+3·2	+3·7	+2·8
	812	Jessore ...	23 9 50	89 12 40	20	12 11 05	31 15·2	31 25·4	32 3·2	+3·3	+3·8	+3·0
79 F	813	Khulnā ...	22 49 0	89 33 20	0	14 11 05	30 39·7	30 49·6	31 25·2	+3·2	+3·6	+2·8
	815	Morelganj ...	22 27 10	89 51 50	0	19 11 05	29 54·9	30 4·2	30 37·1	+3·0	+3·4	+2·5
79 I	818	Dolāiganj ...	23 42 8	90 25 30	20	28 11 05	32 25·9	32 35·2	33 8·6	+3·0	+3·4	+2·6
	816	Chāndpur ...	23 14 0	90 38 0	0	22 11 05	31 29·4	31 38·4	32 9·6	+2·9	+3·2	+2·4
	817	Mādāripur ...	23 10 50	90 12 30	10	25 11 05	31 20·5	31 29·8	32 2·7	+3·0	+3·4	+2·5
79 J	814	Barisāl ...	22 41 10	90 22 0	10	17 11 05	30 17·3	30 26·3	30 57·0	+2·9	+3·2	+2·3
79M	870	Kamalasagar ...	23 44 40	91 9 10	30	16 4 06	32 26·0	32 33·6	33 3·2	+2·8	+3·1	+2·2
	1181	Amarpur ...	23 31 58	91 39 30	200	8 3 08	32 7·2	32 9·4	32 36·8	+2·7	+2·9	+2·0
	LXVI	LĀKSHĀM ...	23 15 40	91 7 20	30	6 4 20	32 7·9	31 38·8	32 7·3	+2·8	+3·0	+2·1
	1184	Golabari ...	23 5 0	91 58 50	500	10 4 08	31 17·4	31 19·0	31 44·8	+2·6	+2·8	+1·8
79 N	872	Noākhāli ...	22 48 20	91 6 30	20	20 4 06	30 35·8	30 43·1	31 10·5	+2·7	+2·9	+2·0
	1028	Mirsarai ...	22 46 40	91 37 50	20	9 5 07	30 37·7	30 41·7	31 8·0	+2·6	+2·8	+1·9
	1027	Bhatiyari ...	22 26 10	91 45 0	30	6 5 07	29 56·2	30 0·6	30 25·9	+2·5	+2·8	+1·7
83 B	1006	Udalguri ...	26 45 50	92 6 50	300	12 12 06	38 8·4	38 14·9	38 51·1	+3·1	+3·7	+2·8
	851	Tezpur ...	26 37 50	92 48 20	200	15 2 06	38 45·8	38 54·2	39 27·6	+2·9	+3·4	+2·6
	850	Mangaldai ...	26 28 49	92 8 20	200	13 2 06	37 32·4	37 41·1	38 16·7	+3·0	+3·6	+2·8
	861	Kāmpur ...	26 9 40	92 39 30	200	13 3 06	36 49·2	36 57·3	37 29·6	+2·9	+3·3	+2·5
	862	Jagi Road ...	26 7 20	92 11 30	200	15 3 06	37 5·5	37 13·6	37 47·0	+2·9	+3·4	+2·6
83 C	864	Shangpang ...	25 28 48	92 21 0	4500	27 3 06	35 53·6	36 1·4	36 32·1	+2·8	+3·2	+2·3
	865	Korongma ...	25 26 8	92 43 30	3200	31 3 06	35 53·8	36 1·4	36 30·4	+2·7	+3·0	+2·2
83 D	867	Karīmganj ...	24 52 0	92 22 10	50	9 4 06	34 36·7	34 44·0	35 12·5	+2·7	+3·0	+2·1
	XXI	SILCHAR ...	24 49 14	92 47 27	70	30 11 19	35 11·8	34 44 6	35 12·0	+2·6	+2·9	+2·0
	1022	Kalosib ...	24 15 16	92 42 10	1900	30 3 07	33 28·6	33 33·3	33 59·6	+2·6	+2·8	+1·9
83 F	852	Behally Mookh ...	26 46 19	93 21 50	250	22 2 06	38 11·2	38 19·3	38 51·1	+2·8	+3·3	+2·4
	858	Oating ...	26 26 13	93 59 30	400	7 3 06	37 54·6	38 2·2	38 30·7	+2·7	+3·0	+2·1

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
83 G	859	Manipur Road ...	25 54 50	93 43 50	500	9 3 06	36 42·4	36 49·7	37 17·1	+2·6	+2·9	+2·0
	860	Lumding ...	25 44 52	93 10 41	500	5 2·11	36 23·7	36 17·5	36 46·0	+2·7	+3·0	+2·1
	866	Hāflang ...	25 11 29	93 1 10	2000	5 4 06	35 14·3	35 21·3	35 48 7	+2·6	+2·9	+2·0
83 H	1020	Manipur ...	24 48 31	93 56 30	2600	6 3 07	34 30·6	34 34·7	34 59·9	+2·3	+2·7	+1·8
	1021	Lengbu ...	24 44 39	93 24 10	4000	14 3 07	34 27·3	34 31·8	34 58·1	+2·5	+2·8	+1·9
83 I	XXII	DIBRUGARH ...	27 29 12	94 54 35	340	25 11 19	39 59·6	39 30·3	39 59·8	+2·7	+3·0	+1·3
83 J	854	Nāzirā ...	26 54 26	94 43 50	400	27 2 06	38 30·0	38 37·3	39 5·2	+2·6	+2·9	+2·1
	853	Kokila Mookh ...	26 51 9	94 8 54	250	24 2 06	38 21·7	38 29·5	38 58·5	+2·7	+3·0	+2·2
	1016	Mokokchung ...	26 19 40	94 31 50	4500	14 2 07	37 31·2	37 36·0	38 2·8	+2·5	+2·8	+2·0
	1017	Wokha ...	26 5 40	94 15 40	5000	19 2 07	36 59·5	37 4·3	37 31·1	+2·5	+2·8	+2·0
83 K	1018	Kohīmā ...	25 40 10	94 6 40	5000	23 2 07	36 12·3	36 17·1	36 43·4	+2·5	+2·8	+1·9
	1019	Kairong ...	25 18 40	94 2 30	4000	2 3 07	35 32·3	35 36·6	36 2·3	+2·4	+2·7	+1·9
83 L	990	Homalin ...	24 51 50	94 54 30	450	22 3 07	35 0·0	35 4·0	35 27·5	+2·2	+2·5	+1·7
	991	Paungbyin ...	24 16 0	94 48 20	400	25 3 07	33 46·6	33 50·2	34 12·6	+2·0	+2·4	+1·6
	1187	Tamu ...	24 12 49	94 19 0	600	26 11 07	33 29·3	33 30·8	33 54·3	+2·1	+2·5	+1·7
83 M	857	Tālāp ...	27 40 10	95 33 40	500	5 3 06	39 52·9	40 0·5	40 29·4	+2·7	+2·9	+2·3
	856	Mārgheritā ...	27 17 20	95 41 20	500	3 3 06	39 5·0	39 12·3	39 39·6	+2·6	+2·8	+2·1
	855	Sapekhati ...	27 6 41	95 9 41	450	28 2 06	38 52·6	38 59·9	39 27·8	+2·6	+2·9	+2·1
83 P	989	Nananton ...	24 45 30	95 40 30	1000	13 3 07	34 39·1	34 42·7	35 5·1	+2·0	+2·4	+1·6
	988	Manyu ...	24 19 20	95 33 40	1000	8 3 07	33 34·9	33 38·3	34 0·1	+1·9	+2·3	+1·6
84 A	1023	Aijal ...	23 43 28	92 43 10	3700	10 4 07	32 26·7	32 28·4	32 54·2	+2·5	+2·8	+1·8
	1024	Tenzol ...	23 18 22	92 47 10	3000	15 4 07	31 43·8	31 46·7	32 11·4	+2·4	+2·7	+1·7
84 B	1025	Lungleh ...	22 53 40	92 44 50	3500	20 4 27	30 56·0	30 59·5	31 23·1	+2·3	+2·6	+1·6
	1026	Rāngāmāti ...	22 38 10	92 11 50	140	5 4 08	30 22·9	30 24·8	30 49·5	+2·4	+2·7	+1·7
	1183	Shilghati ...	22 12 20	92 8 30	50	29 3 08	29 37·9	29 40·0	30 3·6	+2·4	+2·6	+1·6
84 C	1110	Chakaria ...	21 46 0	92 5 50	50	8 5 07	28 41·4	28 45·3	29 8·4	+2·3	+2·6	+1·5
	1217	Kaletwa ...	21 44 0	92 47 50	200	25 11 08	28 38·9	28 38·8	29 0·8	+2·1	+2·5	+1·4
	1216	Paletwa ...	21 18 14	92 51 40	100	20 11 08	27 50·0	27 50·2	28 11·1	+2·1	+2·4	+1·3
84 D	1215	Kyauktaw ...	20 50 25	92 58 40	30	16 11 08	26 51·8	26 51·7	27 11·0	+2·0	+2·3	+1·1
	1109	Maungdaw ...	20 49 50	92 21 40	10	4 5 07	26 50·0	26 53·7	27 14·7	+2·2	+2·5	+1·2
	1108	Rathedaung ...	20 29 10	92 45 10	20	1 5 07	26 3·0	26 4·6	26 23·9	+2·0	+2·3	+1·1
	XX	AKYAB ...	20 8 6	92 53 37	20	2 4 20	25 51·3	25 32·8	25 51·0	+1·9	+2·2	+1·0
84 E	1188	Lenacot ...	23 54 27	93 47 50	4700	3 12 07	32 50·2	32 52·6	33 16·1	+2·2	+2·6	+1·7
	1189	Tunzan ...	23 35 28	93 41 30	3700	6 12 07	32 15·2	32 17·1	32 40·1	+2·1	+2·5	+1·6
	1190	Fort White ...	23 14 49	93 46 30	4000	11 12 07	31 35·1	31 36·1	31 58·6	+2·1	+2·5	+1·5
84 F	1191	Tao ...	22 45 50	93 11 20	5000	20 3 08	30 42·7	30 44·5	31 7·0	+2·2	+2·5	+1·5
	1192	Haka ...	22 38 30	93 37 20	6000	28 3 08	30 32·0	30 33·5	30 54·9	+2·0	+2·4	+1·4
84 H	1098	Kyindwe ...	20 58 10	93 50 10	3000	14 3 07	27 4·5	27 7·6	27 25·8	+1·7	+2·2	+1·0
	1106	Myohaung ...	20 35 20	93 11 20	100	23 4 07	26 21·6	26 25·2	26 43·4	+1·9	+2·2	+1·0
	1107	Myebon ...	20 4 0	93 22 20	20	27 4 07	25 18·4	25 21·6	25 38·7	+1·7	+2·1	+0·9
84 I	LXXIX	KINDAT ...	23 44 10	94 26 0	300	5 3 20	33 10·8	32 48·6	33 10·5	+2·0	+2·4	+1·5
	993	Kalewa ...	23 11 20	94 18 20	200	4 4 07	31 36·4	31 39·9	32 1·8	+1·9	+2·4	+1·5
84 J	1194	Sihaung ...	22 51 0	94 3 20	500	8 4 08	31 3·9	31 5·1	31 26·5	+1·9	+2·4	+1·4
	994	Peginma ...	22 43 50	94 42 30	200	9 4 07	30 40·2	30 41·8	31 2·1	+1·7	+2·3	+1·3
	1193	Kan ...	22 24 40	94 6 20	600	4 4 08	30 7·4	30 8·8	30 29·1	+1·8	+2·3	+1·3
	1086	Thitkyidaing ...	22 1 21	94 32 10	500	20 1 07	29 14·9	29 18·3	29 37·5	+1·7	+2·2	+1·2
84 K	1085	Shwekondaung ...	21 49 10	94 6 30	1000	15 1 07	28 58·6	29 2·0	29 21·2	+1·7	+2·2	+1·2
	1083	Sabē ...	21 27 20	94 35 0	450	6 1 07	28 21·7	28 24·7	28 42·8	+1·5	+2·1	+1·1
	1084	Pasōk ...	21 22 56	94 11 0	1000	9 1 07	28 3·3	28 6·7	28 25·4	+1·7	+2·2	+1·1
	1099	Thōnlanbyi ...	21 4 20	94 16 10	2000	20 3 07	27 26·0	27 28·9	27 46·5	+1·6	+2·1	+1·0
84 L	1088	Seikpyu ...	20 54 20	94 47 30	200	29 1 07	27 0·4	27 2·9	27 19·9	+1·3	+2·0	+1·0
	1097	Tauksōk ...	20 43 30	94 8 10	700	7 3 07	26 45·3	26 48·2	27 5·8	+1·6	+2·1	+1·0
	1089	Kyaukyē ...	20 34 40	94 48 30	200	31 1 07	26 21·9	26 24·2	26 40·1	+1·2	+1·9	+0·9
	1096	Sidoktaya ...	20 25 50	94 14 0	400	4 3 07	26 10·0	26 12·7	26 29·2	+1·5	+2·0	+0·9
	1090	Minbu ...	20 10 1	94 53 20	170	3 2 07	25 30·8	25 32·9	25 47·7	+1·1	+1·8	+0·8
	1095	Ngape ...	20 4 47	94 28 0	450	1 3 07	25 29·5	25 31·8	25 47·2	+1·3	+1·9	+0·8
84 M	971	Kawlin ...	23 47 30	95 41 10	600	11 12 06	32 38·8	32 42·4	33 3·1	+1·7	+2·2	+1·5
	987	Yeshin ...	23 43 10	95 7 20	750	2 3 07	32 42·4	32 45·6	33 6·9	+1·8	+2·3	+1·5
	970	Kanbalu ...	23 13 10	95 32 40	560	9 12 06	31 47·1	31 50·5	32 10·7	+1·6	+2·2	+1·4
84 N	985	Thabeikkyin ...	22 52 50	95 58 20	300	18 2 07	31 5·9	31 8·6	31 27·7	+1·4	+2·1	+1·3
	969	Shwebo ...	22 35 0	95 41 50	360	7 12 06	30 21·5	30 24·4	30 43·0	+1·4	+2·1	+1·2
	986	Singu or (Ngasingn) ...	22 32 50	95 59 30	250	21 2 07	30 36·3	30 38·8	30 56·8	+1·3	+2·0	+1·2

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
84 N	968	Paukkan ...	22 14 10	95 52 10	370	5 12 06	29 43·5	29 46·2	30 4·2	+1·3	+2·0	+1·2
	963	Alon ...	22 13 30	95 4 50	200	19 11 06	29 35·3	29 38·5	29 57·1	+1·5	+2·1	+1·2
84 O	1087	Salingyi ...	21 58 30	95 4 40	200	24 1 07	28 30·1	28 33·0	28 51·6	+1·5	+2·1	+1·2
	962	Wunbye ...	21 56 10	95 32 20	300	17 11 06	29 6·4	29 9·1	29 26·6	+1·3	+2·0	+1·1
	1081	Myingyan ...	21 28 31	95 23 40	250	20 12 06	28 10·9	28 13·3	28 30·3	+1·2	+2·0	+1·0
	1082	Pakokku ...	21 20 0	95 5 30	200	24 12 06	28 4·0	28 6·6	28 23·6	+1·3	+2·0	+1·0
	1080	Mahlaing ...	21 5 40	95 35 40	400	18 12 06	27 23·9	27 25·9	27 41·2	+1·0	+1·8	+0·9
84 P	1100	Chaunggya ...	20 44 0	95 13 30	700	27 3 07	26 49·3	26 51·3	27 6·6	+1·1	+1·8	+0·9
	1101	Myindēgyi ...	20 26 30	95 30 30	900	31 3 07	26 0·4	26 1·8	26 16·0	+0·8	+1·7	+0·8
	1102	Taungdwingyi ...	20 0 0	95 32 50	500	2 4 07	25 12·8	25 14·5	25 27·6	+0·7	+1·6	+0·7
85 E	1218	Kyaukpyu ...	19 25 55	93 33 30	30	4 12 08	23 58·4	23 58·8	24 14·8	+1·5	+2·0	+0·8
	1219	Ramree ...	19 5 50	93 52 0	30	6 12 08	23 19·9	23 20·2	23 35·1	+1·4	+1·9	+0·7
85 F	1220	Cheduba ...	18 51 11	93 43 30	20	10 12 08	22 43·6	22 44·0	22 58·9	+1·4	+1·9	+0·7
85 I	1094	Myothit ...	19 45 20	94 38 10	800	27 2 07	24 40·8	24 42·8	24 57·6	+1·1	+1·8	+0·8
	1240	Sakaman ...	19 38 54	94 0 10	50	7 3 09	24 23·3	24 23·1	24 38·5	+1·4	+1·9	+0·8
	1093	Mindon ...	19 21 10	94 44 10	200	24 2 07	24 0·1	24 2·0	24 15·7	+1·0	+1·7	+0·7
	1239	Mai ...	19 17 10	94 8 0	100	5 3 09	23 44·4	23 42·9	23 57·2	+1·3	+1·8	+0·7
85 J	1238	Taungup ...	18 51 40	94 14 50	4000	2 3 09	22 41·5	22 41·3	22 54·5	+1·2	+1·7	+0·6
	1237	Tabi ...	18 38 16	94 40 20	100	25 2 09	22 16·2	22 16·1	22 28·7	+0·9	+1·6	+0·6
	1221	Sandoway ...	18 27 50	94 22 0	100	18 12 08	21 52·8	21 53·0	22 5·1	+1·0	+1·6	+0·5
85 K	1222	Kyeintali ...	17 59 58	94 29 10	50	23 12 08	20 56·3	20 56·5	21 7·5	+0·9	+1·5	+0·4
	1223	Gwa ...	17 35 20	94 34 50	50	29 12 08	20 1·2	20 1·3	20 11·2	+0·8	+1·4	+0·3
	1224	Bawmi ...	17 18 30	94 34 40	50	1 1 09	19 21·9	19 21·3	19 30·1	+0·8	+1·3	+0·2
85 L	1225	Tazin ...	16 54 20	94 23 40	50	4 1 09	18 27·2	18 26·4	18 34·7	+0·9	+1·3	+0·1
	LXXI	BASSEIN ...	16 46 20	94 44 30	50	1 2 20	18 13·7	18 7·1	18 13·7	+0·7	+1·1	0·0
	1226	Ngo-Ton-Kaung ...	16 30 20	94 18 0	50	10 1 09	17 33·4	17 32·6	17 39·8	+0·9	+1·2	0·0
	1228	Lebutta ...	16 8 40	94 45 20	50	21 1 09	16 48·1	16 46·8	16 51·8	+0·7	+1·0	−0·2
85 M	1091	Sinbaungwe ...	19 43 0	95 9 30	170	6 2 07	24 31·2	24 32·7	24 46·4	+0·8	+1·7	+0·7
	1103	Hngetpyawgyin ...	19 34 20	95 39 20	900	4 4 07	24 17·0	24 18·3	24 30·8	+0·5	+1·5	+0·7
	1092	Thayetmyo ...	19 19 30	95 11 10	150	21 2 07	23 44·8	23 46·1	23 59·2	+0·7	+1·6	+0·7
85 N	1104	Taungle ...	18 53 30	95 40 20	200	11 4 07	22 46·0	22 44·8	22 55·1	+0·3	+1·3	+0·5
	LXX	PROME ...	18 49 40	95 13 20	100	1 1 20	22 54·4	22 42·4	22 54·4	+0·6	+1·5	+0·6
	1067	Paungdē ...	18 29 50	95 29 50	100	15 11 06	22 0·6	22 1·2	22 11·5	+0·3	+1·3	+0·5
	1236	Petye ...	18 18 30	95 8 20	100	19 2 09	21 33·0	21 31·4	21 41·8	+0·6	+1·4	+0·4
85 O	1066	Minhla ...	17 58 30	95 42 20	70	13 11 06	20 52·0	20 52·2	20 59·8	+0·1	+1·1	+0·2
	1225	Mēzaligōn ...	17 52 50	95 14 0	50	17 2 09	20 38·8	20 38·4	20 47·1	+0·5	+1·2	+0·3
	1069	Henzada Shore ...	17 38 30	95 29 10	40	19 11 06	20 13·9	20 14·5	20 22·1	+0·3	+1·1	+0·2
	1065	Palōn ...	17 26 20	95 56 0	70	11 11 06	19 41·3	19 41·1	19 46·5	−0·1	+0·9	0·0
	1070	Athōk ...	17 12 13	95 5 2	50	21 11 06	19 4·4	19 5·5	19 12·6	+0·5	+1·1	+0·1
	1234	Yandoon ...	17 2 50	95 38 10	20	11 2 09	18 54·8	18 54·9	19 0·3	+0·1	+0·9	0·0
85 P	1231	Ma-ubin ...	16 44 20	95 39 10	10	1 2 09	18 12·7	18 12·8	18 16·6	+0·1	+0·8	−0·2
	1229	Wakema ...	16 36 0	95 10 10	10	24 1 09	17 50·1	17 49·1	17 54·6	+0·5	+1·0	−0·1
	1232	Pyapon ...	16 17 10	95 40 50	10	3 2 09	17 14·9	17 15·1	17 17·8	+0·1	+0·7	−0·3
	1230	Mya-Tha ...	16 14 10	95 17 0	10	27 1 09	17 3·7	17 2·6	17 5·9	+0·4	+0·8	−0·3
86 C	1334	Paget Island ...	13 25 50	92 50 0	10	15 1 11	10 44·3	10 41·9	10 44·9		+1·0	−0·6
86 D	1333	Port Andaman ...	12 48 10	92 40 20	10	13 1 11	9 11·3	9 9·1	9 11·0		+0·9	−0·7
	1332	Port Anson ...	12 18 0	92 43 0	10	11 1 11	7 57·3	7 55·6	7 55·8		+0·7	−0·8
86 I	1227	Ka-Baung-Hmaw ...	15 59 50	94 16 40	30	13 1 09	16 16·5	16 15·7	16 21·3	+0·9	+1·1	−0·2
86 M	1233	Kadon-Kani ...	15 46 40	95 12 50	10	7 2 09	16 17·4	16 17·5	16 19·7	+0·5	+0·7	−0·4
87 A	XXIII	PORT BLAIR ...	11 39 53	92 42 48	250	9 12 19	6 28·3	6 29·1	6 28·2		+0·6	−0·9
92 C	974	Taungni ...	25 10 20	96 44 20	540	17 12 06	36 5·7	36 9·5	36 31·3	+1·9	+2·3	+1·6
92 D	973	Mohnyin ...	24 46 30	96 21 20	680	15 12 06	34 52·2	34 55·8	35 17·6	+1·8	+2·3	+1·6
	972	Naba ...	24 15 0	96 11 10	480	13 12 06	33 37·0	33 40·6	34 1·3	+1·7	+2·2	+1·5
92 G	LXVIII	MYITKYINA ...	25 23 20	97 24 10	470	20 2 20	36 28·1	36 6·7	36 27·9	+1·8	+2·2	+1·6
92 H	976	Sinbo ...	24 46 40	97 2 50	450	24 12 06	34 55·6	34 59·0	35 19·7	+1·7	+2·2	+1·5
	LXIX	BHAMO ...	24 15 30	97 13 10	400	24 2 20	34 3·3	33 43·5	34 3·1	+1·5	+2·1	+1·4
93 A	984	Taganng ...	23 30 16	96 0 50	300	16 3 07	32 24·5	32 27·5	32 47·7	+1·6	+2·2	+1·4
	983	Wainglōn ...	23 27 50	96 36 30	800	11 2 07	32 15·3	32 18·0	32 37·1	+1·4	+2·1	+1·3
93 B	982	Mogok ...	22 56 0	96 31 20	3700	3 2 07	30 59·2	31 1·5	31 20·0	+1·2	+2·0	+1·3

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
93 B	965	Gokteik Viaduct ...	22 20 10	96 51 30	2500	14 11 06	29 58·8	30 0·7	30 17·0	+0·9	+1·8	+1·1
	964	Maymyo ...	22 2 20	96 28 0	3700	12 11 06	29 20·1	29 22·2	29 38·5	+1·0	+1·8	+1·1
	LXVII	MANDALAY ...	22 0 13	96 5 58	250	16 3 20	29 31·3	29 14·2	29 31·1	+1·1	+1·9	+1·1
93 C	1157	Kyawkku ...	21 48 20	96 56 10	3100	27 3 08	28 59·9	29 0·6	29 15·2	+0·6	+1·6	+1·0
	1079	Kyaukse ...	21 36 30	96 8 0	280	16 12 06	28 30·3	28 32·3	28 48·1	+1·0	+1·8	+1·0
	1158	Lawk Sawk ...	21 14 40	96 52 30	3000	1 4 08	27 52·4	27 52·7	28 6·2	+0·4	+1·5	+0·9
	1078	Thēdaw ...	21 5 10	96 3 50	440	10 12 06	27 27·7	27 29·4	27 44·1	+0·8	+1·7	+0·9
93 D	LXXVIII	KALAW ...	20 37 40	96 34 10	4300	20 3 20	26 40·8	26 27·6	26 40·6	+0·3	+1·5	+0·8
	1077	Shweda ...	20 31 10	96 4 50	530	8 12 06	26 18·0	26 19·3	26 32·9	+0·6	+1·6	+0·8
	1200	Pinlaung ...	20 7 50	96 46 50	4700	21 1 08	25 29·0	25 28·9	25 40·2	0·0	+1·3	+0·7
93 E	978	Sikaw ...	23 50 0	97 4 0	2600	4 1 07	32 49·6	32 52·4	33 11·4	+1·4	+2·0	+1·4
	979	Namhkam ...	23 50 0	97 40 10	2400	11 1 07	32 52·4	32 54·8	33 13·2	+1 2	+1·9	+1·4
	980	Hsenwi (Theinni) ...	23 17 40	97 57 10	2100	17 1 07	31 55·8	31 57·6	32 14·3	+0·9	+1·7	+1 3
	981	Mān-Ton ...	23 15 0	97 7 0	4000	27 1 07	31 47·2	31 49·5	32 7·4	+1·2	+1·9	+1·3
93 F	XIX	LASHIO ...	22 56 12	97 44 48	2700	12 3 20	31 25·2	31 8·8	31 25·0	+0·8	+1·7	+1·2
	967	Manpwe ...	22 50 40	97 35 30	2200	29 11 06	30 58·1	30 59·8	31 16·0	+0·8	+1·7	+1·2
	966	Hsīpaw ...	22 36 40	97 17 50	1800	27 11 06	30 32·6	30 34·5	30 50·7	+0·9	+1·7	+1·2
	1156	Man Li ...	22 5 50	97 31 30	2500	21 3 08	29 37·6	29 38·5	29 53·6	+0·5	+1·6	+1·1
93 G	1155	Nawngla-Yaw ...	21 38 17	97 44 30	3300	16 3 08	28 37·8	28 37·9	28 51·3	+0·1	+1·4	+1·0
	1154	Wān-Ho-hwe ...	21 9 0	97 34 40	4500	12 3 08	27 38·6	27 38·4	27 50·7	0·0	+1·3	+0·9
	1153	Wān Hoko ...	21 0 6	97 57 0	3500	5 3 08	27 22·2	27 22·3	27 34·0	−0·2	+1·2	+0·9
93 H	1159	Taunggyi ...	20 46 30	97 2 50	4700	6 4 08	26 52·7	26 52·6	27 5·0	+0·1	+1·4	+0 8
	1149	Mōgnai ...	20 30 17	97 52 0	3000	12 2 08	26 18·9	26 18·1	26 28·7	−0·4	+1·1	+0·8
	1201	Loi-put ...	20 17 30	97 18 40	4000	27 1 08	25 49·6	25 49·7	26 0 4	−0·2	+1·2	+0·7
	1202	Mawkmai ...	20 13 10	97 43 30	1600	4 2 08	25 44·9	25 44·0	25 53·5	−0·5	+1·0	+0·7
93 J	1135	Mōng Ma ...	22 45 7	98 16 10	3500	18 11 07	30 52·3	30 52·1	31 7·1	+0·5	+1·5	+1·2
	1136	Mōng Yai ...	22 25 26	98 2 30	2700	22 11 07	30 17·5	30 16·7	30 31·2	+0·4	+1·5	+1·1
	1137	Mōng Awt ...	22 2 16	98 22 30	2500	28 11 07	29 31·6	29 31·4	29 44·7	+0·1	+1·3	+1·1
93 K	1138	Hsupwo ...	21 49 45	98 50 20	4600	5 12 07	29 5·8	29 5·4	29 17·0	−0·2	+1·1	+1·0
	1152	Wān Kawng ...	21 23 22	98 23 30	1800	1 3 08	28 12·6	28 12·4	28 24·0	−0·2	+1·1	+1·0
93 L	1151	Mōngpu ...	20 54 38	98 44 30	1500	23 2 08	27 15·3	27 14·2	27 24·1	−0·6	+0·9	+0·9
	1150	Kengtawng ...	20 45 8	98 18 10	2200	17 2 08	26 51·5	26 51·1	27 1·1	−0·5	+1·0	+0·8
	1148	Mōngpan ...	20 19 11	98 22 10	2200	7 2 08	25 59·9	25 59·1	26 8·0	−0·7	+0·9	+0·7
	1146	Mōng Tun ...	20 18 4	98 54 10	1700	26 1 08	25 58·3	25 56·9	26 4·6	−0·9	+0·7	+0·7
93 O	1141	Mōngsang ...	21 50 38	99 41 30	3000	24 12 07	29 9·8	29 8·3	29 18·7	−0·5	+0·9	+1·0
	1139	Mōng Ping ...	21 21 1	99 1 10	2600	11 12 07	28 10·3	28 9·0	28 18 9	−0·5	+0·9	+0·9
	1140	Kengtung ...	21 16 56	99 37 0	1500	17 12 07	28 1·7	27 59·9	28 9·2	−0·8	+0·8	+0·9
93 P	1144	Mōng Hai ...	20 46 14	99 48 10	2000	16 1 08	26 59·2	26 58·1	27 5·7	−1·0	+0·6	+0·8
	1145	Mōng Hsāt ...	20 31 35	99 15 50	4000	22 1 08	26 26·7	26 24·9	26 32·5	−1·0	+0·6	+0·8
94 A	1076	Pyokkwe ...	19 57 6	96 13 34	400	7 12 06	25 19·3	25 19·9	25 31·8	+0·3	+1·4	+0·7
	1198	Thaungbyin ...	19 55 20	96 31 10	1000	3 1 08	25 4·2	25 4·4	25 15·7	+0·1	+1·3	+0·7
	1199	Thitkyit ...	19 37 50	96 40 30	2000	13 1 08	24 32·2	24 31·9	24 42·1	−0·2	+1·2	+0·6
	1075	Myohla ...	19 24 40	96 16 10	240	4 12 06	24 4·7	24 4·7	24 15·5	0·0	+1·3	+0·6
94 B		TOUNGOO OBSY. ...	18 55 45	96 27 3	160			23 0·4	23 9·2	−0·3	+1·1	+0·5
	1074	Nyaungbintha ...	18 24 17	96 27 21	100	1 12 06	22 0·5	21 59·7	22 7·2	−0·4	+1·0	+0·3
94 C	1073	Pyuntazā ...	17 53 0	96 43 20	40	29 11 06	20 52·1	20 50·8	20 55·5	−0·6	+0·7	+0·1
	1072	Pegu ...	17 20 30	96 28 40	30	27 11 06	19 31·6	19 30·5	19 34·2	−0·5	+0·7	−0·1
94 D	1105	Thamaing ...	16 51 49	96 6 55	20	15 4 07	18 27·1	18 25·8	18 29·0	−0·2	+0·7	−0·2
94 E	1203	Ta-Supteng ...	19 51 20	97 45 10	600	10 2 08	24 59·6	24 58·9	25 7·3	−0·6	+0·9	+0·6
	1205	Loikaw ...	19 40 20	97 13 10	2500	25 2 08	24 38·7	24 38·3	24 47·3	−0·5	+1 0	+0·6
	1204	Namon ...	19 21 42	97 30 50	600	13 2 08	23 57·5	23 56·9	24 4·8	−0·7	+0·9	+0·5
	1206	Kreuko ...	19 15 9	97 2 30	4000	5 3 08	23 48·3	23 48·3	23 56·8	−0·5	+1·0	+0·5
94 F	1207	Pasawng ...	18 52 10	97 18 40	350	13 3 08	22 55·5	22 55·3	23 2·1	−0·7	+0·8	+0·4
	1208	Salween ...	18 26 57	97 21 40	350	18 3 08	21 58·6	21 58·4	22 4·1	−0·8	+0·7	+0·3
	1209	Papun ...	18 3 22	97 27 20	200	27 3 08	21 15·7	21 15·4	21 18·9	−0·9	+0·5	+0·1
94 G	1210	Maipali ...	17 30 45	97 38 40	100	4 4 08	20 1·2	19 59·6	20 0·9	−1·1	+0·3	−0·1
	1197	Kyaikto ...	17 18 40	97 1 0	50	21 12 07	19 25·5	19 24·6	19 27·1	−0 8	+0·5	−0·1
	1211	Hlaingbwe ...	17 7 0	97 49 10	50	8 4 08	19 7·5	19 6·3	19 6·0	−1·2	+0·2	−0·3
94 H	1196	Thaton ...	16 55 8	97 20 20	50	19 12 07	18 34·0	18 33·0	18 33·3	−1·0	+0·3	−0·3
	LXXII	MOULMEIN ...	16 29 40	97 37 30	50	28 12 19	17 37·5	17 40·0	17 37·5	−1·2	0·0	−0·5
	1246	Amherst ...	16 4 50	97 34 0	50	2 2 09	16 37·8	16 38·1	16 35·1	−1·1	0·0	−0·6
94 I	1147	Mōnghta ...	19 51 14	98 34 0	1400	1 2 08	25 0·2	24 58·2	25 5·4	−1·0	+0·7	+0·6

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The values of Dip reduced to epochs 1909·0 and 1920·0 and the annual changes for the periods 1902-1909, 1909-1915 and 1915-1920.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	Height	Date of observation	Value corrected to date	Value reduced to the epoch 1909·0	Value reduced to the epoch 1920·0	ANNUAL CHANGES 1902-09	1909-15	1915-20
			° ′ ″	° ′ ″	ft.							
94 L	1245	Myawadi ...	16 41 18	98 29 50	500	9 1 09	18 8·4	18 8·2	18 4·5	−1·6	−0·2	−0·5
	1244	Kyondo ...	16 35 45	98 3 50	50	2 1 09	17 53·3	17 53·1	17 50·0	−1·4	−0·1	−0·5
	1241	Thanba Ya ...	16 7 20	98 2 10	50	24 3 09	16 52·6	16 52·7	16 48·5	−1·4	−0·2	−0·6
	1243	Mitan ...	16 0 10	98 26 30	300	24 12 08	16 39·8	16 39·9	16 34·5	−1·6	−0·4	−0·6
95 E	1247	Anin ...	15 39 40	97 44 0	10	8 2 09	15 41·0	15 40·7	15 36·5	−1·3	−0·2	−0·6
	1248	Ye ...	15 14 40	97 51 10	30	11 2 09	14 52·1	14 52·3	14 46·4	−1·3	−0·4	−0·7
95 I	1242	Kyunghaung ...	15 32 11	98 15 20	200	5 12 08	15 36·6	15 36·0	15 29·5	−1·6	−0·5	−0·7
95 J	1214	Shintali ...	14 29 14	98 10 0	100	6 5 08	13 16·7	13 14·7	13 5·4	−1·6	−0·8	−0·9
	1249	Myitta ...	14 10 50	98 29 50	500	26 2 09	12 28·8	12 28·8	12 18·3	−1·7	−1·0	−0·9
	XVIII	TAVOY ...	14 3 3	98 12 14	30	8 1 20	12 7·1	12 17·0	12 7·1	−1·6	−0·9	−0·9
95 K	1250	Gonnyinseik ...	13 41 20	98 18 50	20	7 3 09	11 19·8	11 20·0	11 9·0	−1·6	−1·0	−1·0
	1251	Mali ...	13 6 50	98 19 40	30	11 3 09	10 11·5	10 12·0	9 59·3	−1·6	−1·2	−1·1
95 L	1213	Palaw ...	12 58 0	98 44 20	50	19 4 08	9 52·1	9 50·9	9 37·0	−1·8	−1·4	−1·1
	1212	Mergui ...	12 26 50	98 38 50	50	16 4 08	8 33·3	8 32·3	8 17·3	−1·8	−1·5	−1·2
95 P	1255	Tenasserim ...	12 5 40	99 3 30	30	18 4 09	7 43·1	7 43·7	7 27·5	−2·0	−1·7	−1·2
96 I	1252	Kan-Hmaw ...	11 48 20	98 33 20	50	24 3 09	7 3·5	7 4·0	6 47·9	−1·7	−1·6	−1·3
	1253	Bokpyin ...	11 16 40	98 49 30	20	28 3 09	5 47·6	5 47·7	5 30·4	−1·8	−1·8	−1·3
96 K	LXXX	VICTORIA POINT ...	9 59 30	98 35 20	100	22 1 20	2 23·7	2 43·3	2 23·8	−1·5	−2·0	−1·5
102 C	1142	Hsoplamhsaplwe ...	21 23 37	100 14 20	2000	2 1 08	28 16·5	28 15·2	28 23·3	−0·9	+0·6	+0·9
102 D	1143	Nam-Lang-Paliao ...	20 49 47	100 20 50	1400	10 1 08	27 7·5	27 6·0	27 13·0	−1·2	+0·5	+0·8

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
34 J	359	Chaman ...	30 56 10	66 25 20	·44625	·31772	+ ·01610	+ ·31295	·45194	·31325	+ ·01546	+ ·32540
	358	Saiyid Hamid ...	30 35 20	66 43 20	·44415	·32034	+ ·01708	+ ·30717	·44969	·31599	+ ·01627	+ ·31954
	III	QUETTA ...	30 12 21	66 59 55	·44271	·32250	+ ·01674	+ ·30283	·44818	·31825	+ ·01584	+ ·31516
34 K	1264	Mastung Road ...	29 52 40	66 50 30	·44049	·32370	+ ·01693	+ ·29828	·44598	·31957	+ ·01598	+ ·31068
	1263	Kurdagāh ...	29 45 30	66 26 10	·43884	·32398	+ ·01605	+ ·29558	·44421	·31980	+ ·01527	+ ·30792
	1111	Nushki No. 1 ...	29 33 10	66 1 0	...	...	...	...	...	...	...	...
	1262	Nushki ...	29 32 40	66 2 0	·43712	·32451	+ ·01378	+ ·29254	·44262	·32043	+ ·01313	+ ·30507
	1112	Nushki No. 2 ...	29 32 0	66 0 40	...	...	...	...	...	...	...	...
34 N	430	Hindu bāgh ...	30 49 20	67 44 30	·44705	·32012	+ ·01702	+ ·31159	·45257	·31578	+ ·01591	+ ·32381
	431	Chinjan ...	30 34 10	67 55 50	·44420	·32163	+ ·01740	+ ·30589	·44954	·31736	+ ·01619	+ ·31797
	357	Mangi ...	30 22 0	67 28 10	·44408	·32128	+ ·01664	+ ·30613	·44958	·31705	+ ·01560	+ ·31838
34 O	360	Ab i-Gum ...	29 48 10	67 23 10	·44162	·32424	+ ·01584	+ ·29941	·44717	·32018	+ ·01471	+ ·31180
	54 (a)	Sibi ...	29 32 39	67 51 40	·44064	·32544	+ ·01577	+ ·29665	·44627	·32154	+ ·01449	+ ·30911
35 M	289	Shāhdādpur ...	27 51 0	67 54 40	·43589	·33439	+ ·01400	+ ·27927	·44176	·33120	+ ·01247	+ ·29207
	290	Ghaibi Dero ...	27 36 0	67 38 50	·43384	·33539	+ ·01434	+ ·27481	·43962	·33225	+ ·01286	+ ·28759
	291	Gotemado ...	27 11 20	67 35 30	·43098	·33688	+ ·01411	+ ·26843	·43669	·33391	+ ·01258	+ ·28113
	48	Sita Road ...	27 2 30	67 51 10	·43122	·33806	+ ·01345	+ ·26738	·43690	·33514	+ ·01187	+ ·28003
35 N	292	Hairo Khān ...	26 49 20	67 28 10	·42894	·33803	+ ·01317	+ ·26373	·43458	·33417	+ ·01166	+ ·27638
	293	Tando Rahim Khān ...	26 30 30	67 25 40	·42789	33945	+ ·01267	+ ·26021	·43357	·33674	+ ·01116	+ ·27289
	49	Bubāk Road ...	26 29 0	67 46 10	·42736	·34013	+ ·01174	+ ·25846	·43295	·33743	+ ·01012	+ ·27108
	294	Narani ...	26 7 30	67 32 50	·42644	·34200	+ ·01180	+ ·25445	·43201	·33941	+ ·01018	+ ·26707
35 O	295	Pokrum Lundi ...	25 48 30	67 44 30	·42422	·34260	+ ·01133	+ ·24992	·42972	·34012	+ ·00965	+ ·26247
	296	Belo ...	25 47 10	67 26 50	·42317	·34230	+ ·01141	+ ·24853	·42866	·33981	+ ·00979	+ ·26111
	297	Kund ...	25 34 50	67 19 0	·42232	·34285	+ ·01133	+ ·24634	·42779	·34041	+ ·00972	+ ·25890
	298	Kharr ...	25 17 20	67 7 50	·42073	·34366	+ ·01078	+ ·24248	·42627	·34133	+ ·00917	+ ·25518
35 P	II	KARĀCHI ...	24 49 24	67 2 28	·41817	·34539	+ ·01022	+ ·23550	·42346	·34310	+ ·00860	+ ·24803
	39	Dābheji ...	24 48 54	67 29 50	·41868	·34554	+ ·01023	+ ·23620	·42397	·34332	+ ·00844	+ ·24863
	917	Mirpur Sakro ...	24 33 10	67 37 0	·41803	·34674	+ ·01001	+ ·23328	·42326	·34457	+ ·00816	+ ·24567
	916	Shāhbandar ...	24 10 0	67 54 0	·41630	·34839	+ ·00952	+ ·22768	42142	·34633	+ ·00745	+ ·24000
38 K	316	Thal ...	33 21 50	70 33 50	·46427	·30981	+ ·02010	+ ·34519	·46926	·30469	+ ·01828	+ ·35642
	313	Lalāmmar ...	33 7 0	70 51 50	·46383	31159	+ ·01988	+ ·34301	·46898	·30665	+ ·01791	+ ·35438
38 L	312	Sarai-Naurang ...	32 49 40	70 47 0	·46202	·31231	+ ·01944	+ ·33993	·46718	·30746	+ ·01749	+ ·35130
	311	Darra Pezu ...	32 19 20	70 44 20	·46106	·31523	+ ·01940	+ ·33591	·46636	·31056	+ ·01739	+ ·34748
	310	Tānk ...	32 12 30	70 23 20	·45852	·31324	+ ·01867	+ ·33433	·46395	·30857	+ ·01674	+ ·34605
38 N	87	Dargai ...	34 30 10	71 53 50	·47338	·30649	+ ·02194	+ ·36011	·47840	·30119	+ ·01985	+ ·37115
	XXVI	PESHĀWAR ...	34 0 40	71 33 40	·46934	·30839	+ ·02056	+ ·35322	·47421	·30312	+ ·01848	+ ·36420
38 O	315	Kohāt ...	33 34 40	71 26 30	·46681	·30976	+ ·02020	+ ·34863	·47178	·30466	+ ·01814	+ ·35977
	314	Bānda Daud Shāh ...	33 16 40	71 11 10	·46432	·31036	+ ·01909	+ ·34483	·46938	·30535	+ ·01705	+ ·35607
38 P	91	Massan ...	32 53 30	71 43 20	·46332	·31256	+ ·01906	+ ·34148	·46846	·30779	+ ·01687	+ ·35275
	317	Dhanda ...	32 46 30	71 57 40	·46390	·31319	+ ·01936	+ ·34166	·46904	·30843	+ ·01706	+ ·35296
	XXVII	KUNDIĀN ...	32 27 30	71 28 20	·46004	·30985	+ ·01875	+ ·33953	·46546	·30518	+ ·01658	+ ·35105
39 B	429	Kila Saifulla ...	30 42 50	68 21 10	·44736	·32181	+ ·01764	+ ·31026	·45272	·31748	+ ·01621	+ ·32233
	428	Kalu Kila ...	30 41 40	68 43 20	·44880	·32269	+ ·01718	+ ·31145	·45421	·31837	+ ·01566	+ ·32359
	432	Loralai ...	30 21 30	68 36 30	·44557	32327	+ ·01681	+ ·30619	·45091	·31907	+ ·01530	+ ·31824
39 C	361	Spintangi ...	29 55 50	68 4 50	·44355	·32452	+ ·01585	+ ·30194	·44907	·32047	+ ·01452	+ ·31424
	433	Puzza ...	29 54 0	68 42 40	·44351	·32545	+ ·01592	+ ·30088	·44896	·32146	+ ·01436	+ ·31310
	417	Lehri ...	29 10 42	68 12 40	·44059	·32807	+ ·01409	+ ·29375	·44628	·32433	+ ·01262	+ ·30630
	418	Chirdi Dhabbar ...	29 5 17	68 43 10	·43958	·32924	+ ·01456	+ ·29090	·44509	·32557	+ ·01297	+ ·30322
39 D	53	Bellpat ...	28 59 40	68 0 20	·44054	·32937	+ ·01442	+ ·29220	·44624	·32569	+ ·01304	+ ·30476
	299	Hamidpowhar ...	28 26 0	68 46 50	·43703	·33222	+ ·01365	+ ·28362	·44262	·32882	+ ·01197	+ ·29605
	52	Jhatpat ...	28 22 20	68 19 20	·43695	·33167	+ ·01271	+ ·28418	·44264	·32826	+ ·01115	+ ·29673
	288	Chachar ...	28 12 10	68 9 20	·43648	·33213	+ ·01327	+ ·28288	44225	·32884	+ ·01170	+ ·29548
39 E	426	For Sandeman ...	31 20 40	69 27 10	45243	31973	+ ·01831	+ ·31957	·45785	31533	+ ·01662	+ ·33154
39 F	427	Musāfirpur ...	30 58 3	69 8 30	·45074	32172	+ ·01739	+ ·31522	·45618	·31740	+ ·01581	+ ·32727
	424	Mūsā Khel Bāzār ...	30 52 30	69 48 50	·45065	32237	+ ·01816	+ ·31438	·45605	31813	+ ·01631	+ ·32635
	425	Mekhlar ...	30 29 0	69 20 20	·44767	·32374	+ ·01709	+ ·30873	·45296	·31953	+ ·01537	+ ·32068
	423	Kingri ...	30 26 20	69 49 0	·44844	·32435	+ ·01778	+ ·30916	45383	32028	+ ·01590	+ ·32114
	422	Rakhni ...	30 2 50	69 55 30	·44634	32625	+ ·01728	+ ·30411	45179	·32234	+ ·01534	+ ·31620
39 G	421	Mat ...	29 42 20	69 40 0	·44389	·32717	+ ·01670	+ ·29955	·44929	·32335	+ ·01482	+ ·31159
	420	Chat ...	29 20 21	69 24 30	·44214	·32870	+ ·01578	+ 29528	44761	32499	+ ·01391	+ ·30748
	419	Dera Bugti ...	29 2 0	69 9 20	43996	·32973	+ ·01516	+ ·29088	44546	·32612	+ ·01340	+ ·30315
39 H	302	Tuziani ...	28 56 40	69 54 40	·44210	·33071	+ ·01666	+ ·29293	·44770	·32724	+ ·01462	+ ·30519
	301	Bārā ...	28 33 0	69 39 30	·43878	33264	+ ·01589	+ ·28571	44433	632932	+ ·01386	+ 29798

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
39 H	300	Bela (Tas) ...	28 23 40	69 14 10	·43793	·33290	+ ·01431	+ ·28416	·44355	·32962	+ ·01246	+ ·29653
	26	Reti ...	28 5 10	69 51 20	·43755	·33500	+ ·01604	+ ·28102	·44305	·33185	+ ·01390	+ ·29322
	56	Khairpur Deherki ...	28 2 40	69 41 30	...	...	...	...	...	...	...	...
39 I	309	Draband ...	31 44 0	70 19 40	·45942	·32072	+ ·01908	+ ·32838	·46489	·31626	+ ·01712	+ ·34031
	308	Gurwāli ...	31 21 50	70 29 0	·45540	·32146	+ ·01865	+ ·32203	·46073	·31712	+ ·01659	+ ·33383
	364	Dorata ...	31 5 10	70 55 30	·45533	·32226	+ ·01809	+ ·32117	·46081	·31803	+ ·01589	+ ·33308
39 J	307	Jhok Bodo ...	30 55 0	70 32 20	·45277	·32252	+ ·01808	+ ·31726	·45823	·31835	+ ·01603	+ ·32919
	363	Daera Dīnpanāh ...	30 34 10	70 55 30	·45193	·32416	+ ·01630	+ ·31448	·45739	·32014	+ ·01412	+ ·32638
	306	Mamdāni ...	30 25 20	70 36 50	·45250	·32556	+ ·01695	+ ·31381	·45808	·32160	+ ·01481	+ ·32587
	305	Vidor ...	30 5 10	70 32 20	·45009	·32773	+ ·01633	+ ·30807	·45571	·32388	+ ·01420	+ ·32027
	362	Ghāzi Ghāt ...	30 4 50	70 51 50	·44986	·32800	+ ·01629	+ ·30745	·45538	·32419	+ ·01410	+ ·31948
39 K	304	Ganehar ...	29 44 0	70 20 20	·44686	·32692	+ ·01586	+ ·30424	·45247	·32317	+ ·01378	+ ·31639
	303	Dirigri ...	29 24 30	70 8 30	·44662	·32983	+ ·01664	+ ·30068	·45228	·32620	+ ·01460	+ ·31296
39 L	58 (*a*)	Khānpur ...	28 38 50	70 39 10	·43951	·33346	+ ·01369	+ ·28598	·44501	·33020	+ ·01142	+ ·29812
	57	Sādikābād ...	28 18 10	70 7 40	·44154	·33447	+ ·01532	+ ·28784	·44734	·33132	+ ·01312	+ ·30028
	244	Maruwala Toba ...	28 15 34	70 38 50	·43791	·33338	+ ·01301	+ ·28363	·44346	·33022	+ ·01074	+ ·29579
	245	Bher Tibba ...	28 0 27	70 22 10	·43965	·33561	+ ·01377	+ ·28368	·44534	·33256	+ ·01149	+ ·29597
39 M	366	Shāh Alam ...	31 58 40	71 9 0	·45807	·31764	+ ·01876	+ ·32952	·46329	·31313	+ ·01661	+ ·34104
	365	Bhakkar ...	31 37 10	71 3 0	·45749	·31990	+ ·01759	+ ·32657	·46281	·31550	+ ·01545	+ ·33824
	322	Nāwankot ...	31 6 30	71 31 0	·45533	·32355	+ ·01791	+ ·31988	·46072	·31943	+ ·01560	+ ·33165
39 N	323	Rangpur ...	30 31 0	71 34 50	·45229	·32618	+ ·01797	+ ·31282	·45769	·32229	+ ·01556	+ ·32459
	76 (*a*)	Multān ...	30 10 50	71 26 50	·44970	·32626	+ ·01664	+ ·30905	·45523	·32247	+ ·01425	+ ·32100
	324	Muzaffargarh ...	30 4 40	71 10 50	·44950	·32811	+ ·01675	+ ·30678	·45498	·32431	+ ·01444	+ ·31877
39 O	77	Gilawāla ...	29 43 6	71 28 20	·44820	·32987	+ ·01630	+ ·30299	·45381	·32629	+ ·01384	+ ·31509
	IV	BAHĀWALPUR ...	29 24 23	71 40 35	·44724	·33076	+ ·01662	+ ·30057	·45276	·32731	+ ·01411	+ ·31251
	37	Samāsata ...	29 21 12	71 32 30	·44936	·33293	+ ·01786	+ ·30127	·45495	·32947	+ ·01537	+ ·31334
	59	Chanigot ...	29 5 11	71 1 30	·44435	·33164	+ ·01502	+ ·29537	·44994	·32823	+ ·01268	+ ·30749
39 P	25	Derāwar Fort ...	28 46 20	71 20 10	·44362	·33162	+ ·01601	+ ·29422	·44929	·32838	+ ·01355	+ ·30634
	24	Khāngarh ...	28 22 10	71 42 50	·44448	·33637	+ ·01216	+ ·29028	·45004	·33327	+ ·00956	+ ·30228
	242	Sarwar ka Toba ...	28 17 34	71 6 40	·44014	·33502	+ ·01415	+ ·28510	·44562	·33187	+ ·01170	+ ·29714
40 A	XXIV	RUK JUNCTION ...	27 48 23	68 38 20	·43389	·33498	+ ·01203	+ ·27550	·43947	·33180	+ ·01030	+ ·28798
	47 (*a*)	Lārkāna ...	27 32 28	68 11 50	·43313	·33508	+ ·01191	+ ·27420	·43885	·33200	+ ·01024	+ ·28681
	45	Khairpur ...	27 31 7	68 44 20	·43282	·33626	+ ·01239	+ ·27223	·43845	·33324	+ ·01055	+ ·28474
40 B	44	Kandiāro Road ...	26 59 20	68 20 50	·43198	·33917	+ ·01085	+ ·26731	·43763	·33629	+ ·00907	+ ·27991
	30	Tujjul ...	26 52 50	68 59 20	·43037	·33930	+ ·01233	+ ·26445	·43593	·33657	+ ·01032	+ ·27687
	43	Daur ...	26 27 40	68 18 30	·42757	·34060	+ ·01147	+ ·25822	·43311	·33795	+ ·00963	+ ·27071
	31	Mubarik Shāh Syud ...	26 23 40	68 56 20	·42765	·34132	+ ·01179	+ ·25739	·43305	·33868	+ ·00978	+ ·26969
	50	Saun ...	26 1 40	68 6 50	·42546	·34226	+ ·01142	+ ·25248	·43090	·33973	+ ·00958	+ ·26489
40 C	42	Shāhdādpur ...	25 55 39	68 37 53	·42531	·34277	+ ·01112	+ ·25155	·43077	·34028	+ ·00911	+ ·26399
	51	Petāro ...	25 32 0	68 19 10	·42318	·34405	+ ·01091	+ ·24615	·42855	·34167	+ ·00896	+ ·25851
	133	Rahoki Junction ...	25 24 30	68 28 0	·42239	·34446	+ ·01073	+ ·24422	·42773	·34214	+ ·00871	+ ·25656
	41	Hyderābād ...	25 22 2	68 22 30	·42232	·34460	+ ·01092	+ ·24390	·42765	·34227	+ ·00890	+ ·25624
	40	Jhimpir ...	25 1 49	68 0 50	·42068	·34551	+ ·01043	+ ·23976	·42599	·34323	+ ·00847	+ ·25217
40 D	914	Talher ...	24 53 0	68 49 0	·42073	·34677	+ ·01040	+ ·23801	·42602	·34462	+ ·00827	+ ·25032
	915	Mirpur Batoro ...	24 44 10	68 15 20	·41946	·34663	+ ·00989	+ ·23602	·42471	·34441	+ ·00783	+ ·24839
	9	Kirria ...	24 20 0	68 46 40	·41692	·34814	+ ·01019	+ ·22916	·42209	·34615	+ ·00795	+ ·24141
40 E	55	Pano Ākil ...	27 50 50	69 6 50	·43529	·33524	+ ·01365	+ ·27731	·44088	·33212	+ ·01174	+ ·28971
	27	Lūnwara Tur ...	27 44 30	69 38 40	·43481	·33585	+ ·01484	+ ·27577	·44035	·33280	+ ·01276	+ ·28808
	28	Piareh-ka-Toar ...	27 18 20	69 32 20	·43240	·33768	+ ·01403	+ ·26987	·43798	·33478	+ ·01191	+ ·28214
40 F	29	Jussio ...	26 48 40	69 29 20	·43022	·33991	+ ·01329	+ ·26339	·43562	·33717	+ ·01116	+ ·27560
	86	Sumrahu ...	26 29 0	69 59 40	...	...	...	...	...	...	...	...
	32	Bakār ...	26 5 10	69 9 0	·42628	·34244	+ ·01190	+ ·25359	·43164	·33991	+ ·00977	+ ·26586
40 G	34	Rānāhu ...	25 56 10	69 47 20	·42571	·34303	+ ·01258	+ ·25180	·43097	·34062	+ ·01028	+ ·26384
	33	Khipro ...	25 49 20	69 22 20	·42492	·34318	+ ·01206	+ ·25028	·43024	·34077	+ ·00988	+ ·26246
	XXXI	MIRPUR KHĀS ...	25 31 10	69 1 40	·42390	·34464	+ ·01145	+ ·24654	·42917	·34227	+ ·00932	+ ·25875
	135(*a*)	Dhoro Naro ...	25 29 51	69 33 50	·42407	·34483	+ ·01211	+ ·24654	·42943	·34258	+ ·00981	+ ·25874
	912	Mithrea ...	25 9 42	70 0 0	·42296	·34376	+ ·00986	+ ·24622	·42834	·34161	+ ·00741	+ ·25831
	913	Pireh Kolachi ...	25 1 27	69 26 20	·42225	·34622	+ ·01269	+ ·24138	·42752	·34408	+ ·01037	+ ·25353
40 H	7 (*a*)	Diplo ...	24 28 0	69 34 30	·41912	·34718	+ ·01228	+ ·23448	·42437	·34520	+ ·00985	+ ·24663
	8	Rahim-ki-Bāzār ...	24 19 0	69 9 0	·41783	·34831	+ ·01133	+ ·23052	·42302	·34632	+ ·00897	+ ·24273
40 I	243	Islāmgarh ...	27 51 30	70 48 40	·43697	·33505	+ ·01266	+ ·28023	·44246	·33205	+ ·01028	+ ·29225
	416	Kalu ...	27 25 7	70 17 28	·43604	·33891	+ ·01299	+ ·27407	·44153	·33602	+ ·01070	+ ·28622
40 J	410	Ravilahu ...	26 52 35	70 2 20	·43223	·34040	+ ·01301	+ ·26591	·43768	·33782	+ ·01071	+ ·27809
	411	Khubha ...	26 49 8	70 40 9	·43293	·34119	+ ·01286	+ ·26618	·43830	·33853	+ ·01039	+ ·27820

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
40 J	409	Jejrawa ...	26 15 23	70 38 51	·42866	·34323	+ ·01214	+ ·25651	·43395	·34078	+ ·00962	+ ·26850
	35	Nasīr Aresur ...	26 9 20	70 7 30	·42828	·34308	+ ·01161	+ ·25610	·43360	·34061	+ ·00921	+ ·26816
40 K	262	Jaisingder ...	25 45 41	70 24 30	·42482	·34263	+ ·01089	+ ·25090	·43009	·34034	+ ·00839	+ ·26282
	261	Bhachbhar ...	25 44 0	70 59 0	·42677	·34031	+ ·01420	+ ·25713	·43227	·33810	+ ·01153	+ ·26910
	911	Khisar ...	25 21 49	70 28 40	·42344	·34664	+ ·00981	+ ·24300	·42851	·34444	+ ·00724	+ ·25482
40 L	4 (a)	Sheria Bheel ...	24 43 50	70 52 50	·42075	·34879	+ ·01060	+ ·23509	·42585	·34688	+ ·00784	+ ·24691
	6 (a)	Islamkot ...	24 42 10	70 9 50	·42736	·35354	+ ·00819	+ ·23996	·43258	·35149	+ ·00563	+ ·25209
	5	Tūr Lūnian ...	24 39 0	70 31 40	·42513	·34931	+ ·01381	+ ·24192	·43052	·34736	+ ·01114	+ ·25409
40 M	241	Lohita Tibba ...	27 55 5	71 32 10	·44462	·33802	+ ·01090	+ ·28864	·45040	·33508	+ ·00831	+ ·30086
	414	Satiaya ...	27 25 15	71 39 9	·43138	·33614	+ ·01586	+ ·26990	·43653	·33339	+ ·01314	+ ·28149
	415	Dīga ...	27 24 15	71 0 2	·43585	·33861	+ ·01404	+ ·27406	·44134	·33584	+ ·01153	+ ·28611
40 N	413	Hurdikot ...	26 57 25	71 51 0	·43583	·33741	+ ·01828	+ ·27526	·44142	·33487	+ ·01543	+ ·28720
	412	Kakrasar ...	26 55 36	71 12 10	·43407	·34126	+ ·01424	+ ·26787	·43938	·33862	+ ·01161	+ ·27974
	407	Wallār ...	26 29 11	71 48 42	·45454	·34539	+ ·01408	+ ·29515	·46121	·34303	+ ·01121	+ ·30809
	408	Mandai G.T.S. ...	26 21 10	71 10 40	·43112	·34475	+ ·01125	+ ·25861	·43631	·34230	+ ·00856	+ ·27042
40 O	260	Kavas ...	25 52 17	71 31 40	·42758	·34577	+ ·01288	+ ·25119	·43270	·34356	+ ·01002	+ ·26288
	LXXIII	BĀRMER ...	25 44 35	71 26 40	·42685	·34393	+ ·01136	+ ·25255	·43209	·34170	+ ·00852	+ ·26432
	406	Mondawla G.T.S. ...	25 24 47	71 52 10	·43098	·35021	+ ·01194	+ ·25092	·43623	·34816	+ ·00894	+ ·26269
	910	Kunra ...	25 22 30	71 2 40	·42701	·34794	+ ·01151	+ ·24727	·43223	·34583	+ ·00875	+ ·25913
40 P	8	Dutwa ...	24 52 50	71 28 50	·42397	·34881	+ ·01180	+ ·24071	·42919	·34692	+ ·00887	+ ·25253
	2	Sāchor ...	24 45 20	71 45 50	·42646	·35122	+ ·01007	+ ·24169	·43180	·34943	+ ·00701	+ ·25357
	1	Pāvdasān ...	24 29 20	71 53 50	·42549	·35141	+ ·00697	+ ·23978	·43096	·34977	+ ·00389	+ ·25174
	923	Suigām ...	24 9 10	71 21 10	·42404	·35537	+ ·00644	+ ·23127	·42920	·35366	+ ·00344	+ ·24316
	18	Diodar ...	24 6 30	71 46 10	·42209	·35389	+ ·00872	+ ·22987	·42728	·35231	+ ·00561	+ ·24170
41 A	10 (a)	Lakhpat ...	23 49 20	68 46 50	·41543	·35006	+ ·01080	+ ·22343	·42050	·34818	+ ·00849	+ ·23562
	11 (a)	Murr ...	23 33 20	68 56 40	·41558	·35072	+ ·01231	+ ·22260	·42068	·34891	+ ·00993	+ ·23481
	919	Jakhan ...	23 13 10	68 43 10	·41252	·35256	+ ·00928	+ ·21398	·41743	·35078	+ ·00691	+ ·22616
41 B	926	Dwārkā ...	22 14 40	68 57 10	·41051	·35530	+ ·01042	+ ·20536	·41543	·35380	+ ·00786	+ ·21759
41 E	920	Banri ...	23 44 47	69 29 35	·41569	·34941	+ ·01008	+ ·22496	·42080	·34760	+ ·00760	+ ·23706
	12 (a)	Nakhtarāra ...	23 20 50	69 15 10	·41478	·35133	+ ·01001	+ ·22025	·41986	·34956	+ ·00753	+ ·23243
	13	Kalyānpur ...	23 13 40	69 35 40	·41586	·35456	+ ·00766	+ ·21720	·42094	·35289	+ ·00506	+ ·22942
41 F	918	Mandvi (Cutch) ...	22 49 30	69 22 0	·41201	·35405	+ ·01091	+ ·21043	·41693	·35246	+ ·00830	+ ·22256
	925	Salāya ...	22 18 10	69 36 20	·41410	·35720	+ ·00996	+ ·20926	·41916	·35576	+ ·00721	+ ·22152
41 G	IX	PORBANDAR ...	21 37 43	69 36 39	·41158	·36094	+ ·00766	+ ·19764	·41649	·35971	+ ·00478	+ ·20986
41 I	922	Lodrāni ...	23 53 50	70 37 30	·41854	·35273	+ ·00974	+ ·22508	·42367	·35109	+ ·00697	+ ·23703
	921	Trangeribet ...	23 51 20	70 4 20	·41794	·35016	+ ·00574	+ ·22808	·42315	·34838	+ ·00311	+ ·24016
	16 (a)	Ādesar ...	23 33 30	70 59 10	·41810	·35396	+ ·00767	+ ·22239	·42325	·35242	+ ·00473	+ ·23436
	15 (a)	Lākadiya ...	23 20 30	70 34 40	·41375	·35057	+ ·00625	+ ·21967	·41890	·34900	+ ·00340	+ ·23165
	14	Bhīmasar ...	23 11 20	70 9 50	·41090	·35180	+ ·00635	+ ·21223	·41579	·35019	+ ·00360	+ ·22414
41 J	142 (a)	Morvi ...	22 49 20	70 50 50	·41519	·35454	+ ·00427	+ ·21604	·42039	·35313	+ ·00128	+ ·22810
	145	Jāmnagar ...	22 28 30	70 4 20	·41159	·35736	+ ·00785	+ ·20408	·41646	·35597	+ ·00500	+ ·21610
	143	Rājkot ...	22 18 20	70 48 40	·41609	·36223	+ ·00340	+ ·20472	·42110	·36104	+ ·00029	+ ·21674
	924	Kālāvad ...	22 12 20	70 22 50	·41231	·35704	+ ·00549	+ ·20612	·41739	·35580	+ ·00255	+ ·21820
41 K	150	Jām Jodhpur ...	21 54 10	70 1 50	·40875	·35886	+ ·01256	+ ·19529	·41344	·35762	+ ·00962	+ ·20723
	144	Virpur ...	21 51 0	70 42 20	·41016	·35838	+ ·00694	+ ·19937	·41515	·35731	+ ·00386	+ ·21131
	146	Junagad ...	21 31 50	70 27 0	·40614	·35824	+ ·00771	+ ·19121	·41097	·35724	+ ·00469	+ ·20311
	927	Gigasaran ...	21 17 0	70 57 10	·40881	·36168	+ ·00495	+ ·19049	·41377	·36088	+ ·00172	+ ·20242
41 L	147	Verāval ...	20 54 20	7 22 30	·40556	·36232	+ ·00657	+ ·18211	·41030	·36153	+ ·00340	+ ·19398
41 M	17	Vārāhi ...	23 47 50	71 26 20	·41890	·35326	+ ·00831	+ ·22499	·42399	·35166	+ ·00526	+ ·23682
	140 (a)	Dhrāngadhra ...	23 0 0	71 28 40	·41985	·36134	+ ·00706	+ ·21367	·42482	·36002	+ ·00383	+ ·22550
41 N	138 (a)	Limbdi ...	22 34 0	71 48 0	·41027	·35557	+ ·00711	+ ·20455	·41528	·35454	+ ·00382	+ ·21620
	141	Dolia ...	22 31 20	71 21 50	·41598	·35894	+ ·00734	+ ·21011	·42117	·35783	+ ·00413	+ ·22210
	137	Ningāla ...	22 1 30	71 42 20	·41460	·36213	+ ·00654	+ ·20177	·41965	·36119	+ ·00313	+ ·21362
41 O	149	Chital ...	21 44 40	71 12 40	·40993	·35992	+ ·00379	+ ·19620	·41492	·35900	+ ·00522	+ ·20803
	928	Ghoba ...	21 25 40	71 34 20	·40852	·36021	+ ·00404	+ ·19265	·41355	·35953	+ ·00066	+ ·20437
	690	Mahuva Bandar ...	21 2 20	71 46 30	·40791	·36372	+ ·00308	+ ·18460	·41290	·36325	− ·00052	+ ·19630
41 P	691	Jāfarābād ...	20 51 50	71 22 10	·40800	·36273	+ ·00771	+ ·18662	·41307	·36223	+ ·00424	+ ·19847
43 B	86	Rashtai ...	34 7 0	72 1 20	·47093	·30702	+ ·02095	+ ·35648	·47595	·30184	+ ·01878	+ ·36752
43 C	85	Khairābād ...	33 54 10	72 13 10	·46885	·30924	+ ·02075	+ ·35179	·47372	·30412	+ ·01848	+ ·36274
	84	Sarai Kāla ...	33 44 40	72 49 10	·47122	·31082	+ ·02072	+ ·35357	·47640	·30591	+ ·01830	+ ·36475
	90	Fatehjang ...	33 34 20	72 38 30	·46914	·31153	+ ·02062	+ ·35017	·47417	·30661	+ ·01825	+ ·36123

Note:—Y is + or − according as Declination is East or West, Z is + or − according as Dip is towards the North or South.

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1909·0 and 1920·0

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
43 C	89	Jand ...	33 26 20	72 0 50	·46648	·31068	+ ·02001	+ ·34738	·47147	·30570	+ ·01771	+ ·35848
43 D	319	Chakwāl ...	32 56 10	72 51 10	·46582	·31324	+ ·01941	+ ·34422	·47106	·30860	+ ·01691	+ ·35551
	318	Talagang ...	32 55 50	72 25 0	·46710	·31301	+ ·01936	+ ·34617	·47255	·30825	+ ·01696	+ ·35750
	94	Lilla ...	32 33 0	72 44 40	·46730	·31524	+ ·02002	+ ·34439	·47280	·31071	+ ·01751	+ ·35594
	96	Bhera ...	32 29 20	72 55 20	·46647	·31807	+ ·01802	+ ·34072	·47182	·31358	+ ·01543	+ ·35221
	93(*a*)	Hadāli ...	32 18 40	72 10 10	·46360	·31693	+ ·01969	+ ·33776	·46887	·31241	+ ·01728	+ ·34920
	1399	Sargodha ...	32 6 0	72 38 30	·46170	·31860	+ ·01818	+ ·33366	·46701	·31422	+ ·01569	+ ·34514
43 F	1342	Muzaffarābād ...	34 22 10	73 27 40	·47429	·30755	+ ·02099	+ ·36045	·47946	·30261	+ ·01850	+ ·37144
43 G	1341	Murree ...	33 55 10	73 23 20	·47127	·30971	+ ·02067	+ ·35461	·47642	·30481	+ ·01812	+ ·36570
	V	RAWALPINDI ...	33 35 25	73 3 6	·46915	·31141	+ ·02013	+ ·35031	·47425	·30655	+ ·01768	+ ·36143
	83	Mankiala ...	33 29 0	73 14 40	·46992	·31265	+ ·02057	+ ·35021	·47511	·30786	+ ·01800	+ ·36142
	1340	Behari ...	33 23 20	73 43 50	·46932	·31281	+ ·02016	+ ·34929	·47462	·30818	+ ·01751	+ ·36053
	82	Domeli ...	33 2 0	73 28 0	·46685	·31396	+ ·01950	+ ·34496	·47213	·30939	+ ·01686	+ ·35623
43 H	81	Lāla Mūsa ...	32 42 40	73 57 0	·46629	·31550	+ ·01884	+ ·34283	·47170	·31109	+ ·01610	+ ·35422
	95	Khewra ...	32 38 0	73 0 10	·46523	·31391	+ ·01734	+ ·34293	·47067	·30937	+ ·01478	+ ·35441
	97	Hariah ...	32 34 30	73 19 30	·46510	·31536	+ ·01793	+ ·34139	·47054	·31093	+ ·01531	+ ·35284
43 J	1345	Gurais ...	34 38 0	74 51 50	·47596	·30554	+ ·02133	+ ·36431	·48137	·30084	+ ·01862	+ ·37533
	1344	Shalura ...	34 29 30	74 7 40	·47586	·30709	+ ·02146	+ ·36287	·48120	·30227	+ ·01887	+ ·37395
	1343	Uri ...	34 5 0	74 2 50	·47421	·31023	+ ·02144	+ ·35801	·47948	·30545	+ ·01878	+ ·36911
	1256(*a*)	Srīnagar ...	34 3 50	74 50 30	·47526	·31005	+ ·02087	+ ·35958	·48068	·30544	+ ·01808	+ ·37072
43 K	1346	Hirpur ...	33 40 50	74 43 0	·47359	·31237	+ ·01922	+ ·35544	·47907	·30780	+ ·01645	+ ·36674
	1354	Thana Mandi ...	33 32 40	74 22 0	·47363	·31693	+ ·02127	+ ·35132	·47887	·31237	+ ·01849	+ ·36349
	1355	Changassarai ...	33 14 40	74 15 50	·46970	·31337	+ ·01857	+ ·34938	·47507	·30884	+ ·01585	+ ·36064
	1353	Poni ...	33 4 50	74 41 50	·46875	·31638	+ ·02122	+ ·34523	·47399	·31199	+ ·01830	+ ·35637
43 L	1356	Bhimbar ...	32 58 20	74 4 50	·46750	·31517	+ ·01931	+ ·34474	·47274	·31071	+ ·01656	+ ·35590
	80	Jammu ...	32 43 0	74 51 20	·46642	·31742	+ ·01934	+ ·34122	·47165	·31313	+ ·01639	+ ·35234
	79	Sambriāl ...	32 28 10	74 21 20	·46627	·31818	+ ·01851	+ ·34035	·47162	·31392	+ ·01567	+ ·35162
	1339	Dhoda ...	32 9 50	74 41 50	·46447	·31947	+ ·01797	+ ·33667	·46990	·31539	+ ·01504	+ ·34802
	78	Gujrānwāla ...	32 9 40	74 12 0	·46525	·31954	+ ·01763	+ ·33771	·47073	·31533	+ ·01480	+ ·34919
43 N	1257(*a*)	Sonamarg ...	34 18 30	75 18 30	·47555	·30860	+ ·02117	+ ·36121	·48097	·30400	+ ·01830	+ ·37226
43 O	1348	Inshin ...	33 48 30	75 33 40	·47512	·31197	+ ·02093	+ ·35773	·48060	·30754	+ ·01795	+ ·36888
	1347	Islāmābād ...	33 43 50	75 8 50	·47401	·31232	+ ·02035	+ ·35599	·47950	·30787	+ ·01747	+ ·36720
	1349	Sof ...	33 37 0	75 17 40	·47325	·31308	+ ·02026	+ ·35431	·47866	·30865	+ ·01733	+ ·36546
	1350	Banihal ...	33 26 20	75 12 0	·47319	·31388	+ ·02066	+ ·35351	·47864	·30949	+ ·01777	+ ·36470
	1351	Ramban ...	33 13 30	75 14 40	·47254	·31598	+ ·02054	+ ·35075	·47794	·31165	+ ·01753	+ ·36193
43 P	1352	Udampur ...	32 55 20	75 7 30	·47059	·31701	+ ·02024	+ ·34720	·47607	·31272	+ ·01724	+ ·35854
	100	Pathānkot ...	32 16 30	75 38 40	·46847	·32117	+ ·01935	+ ·34050	·47397	·31717	+ ·01614	+ ·35184
44 A	1400	Sillanwali ...	31 49 35	72 30 40	·46168	·32066	+ ·01842	+ ·33165	·46706	·31639	+ ·01592	+ ·34320
	320	Khair Kulan ...	31 46 50	72 11 0	·46118	·31917	+ ·01726	+ ·33245	·46669	·31483	+ ·01482	+ ·34418
	1401	Jhang (Maghiāna) ...	31 15 30	72 19 30	·45684	·32328	+ ·01730	+ ·32231	·46217	·31917	+ ·01474	+ ·33393
	321	Athārānhazāri ...	31 10 30	72 5 40	·45454	·32126	+ ·01541	+ ·32118	·45994	·31714	+ ·01300	+ ·33286
	369	Gojra ...	31 8 39	72 40 30	·45687	·32378	+ ·01736	+ ·32185	·46226	·31978	+ ·01470	+ ·33349
44 B	370	Darkhana ...	30 39 50	72 11 10	·45435	·32565	+ ·01591	+ ·31643	·45981	·32176	+ ·01336	+ ·32822
	74	Chichawatni ...	30 32 10	72 41 50	·45681	·32804	+ ·01650	+ ·31748	·46247	·32427	+ ·01379	+ ·32945
	75	Kacha Khuh ...	30 22 40	72 9 10	·45211	·32608	+ ·01518	+ ·31279	·45765	·32229	+ ·01264	+ ·32467
44 C	61	Bakhshan Khan ...	29 44 30	72 42 50	·45068	·33056	+ ·01508	+ ·30597	·45628	·32710	+ ·01227	+ ·31787
	60	Asrani ...	29 31 30	72 8 10	·45133	·33151	+ ·01555	+ ·30586	·45697	·32806	+ ·01288	+ ·31787
	239	Mojgarh ...	29 0 50	72 8 20	·44691	·33480	+ ·01298	+ ·29575	·45236	·33149	+ ·01027	+ ·30762
44 D	238	Ranabhana Toba ...	28 54 31	72 38 10	·44686	·33320	+ ·01146	+ ·29754	·45240	·33000	+ ·00862	+ ·30934
	240	Kumhāriwala ...	28 31 57	72 14 10	·44988	·33438	+ ·01783	+ ·30043	·45583	·33134	+ ·01503	+ ·31267
	250	Pungāl ...	28 30 50	72 48 40	·44490	·33663	+ ·01239	+ ·29063	·45028	·33353	+ ·00947	+ ·30234
	251	Angnao ...	28 6 0	72 47 0	·44262	·33785	+ ·01384	+ ·28562	·44809	·33500	+ ·01084	+ ·29739
	23	Ranjitpura ...	28 1 0	72 7 20	·44074	·33792	+ ·01339	+ ·28263	·44618	·33499	+ ·01057	+ ·29453
44 E	367	Kaleke ...	31 58 20	73 36 20	·46404	·32066	+ ·01836	+ ·33494	·46949	·31645	+ ·01561	+ ·34646
	368	Chiniot Road ...	31 34 20	73 10 40	·46073	·32270	+ ·01676	+ ·32842	·46619	·31859	+ ·01407	+ ·34005
	72	Chānga Mānga ...	31 5 30	73 56 30	·45873	·32542	+ ·01686	+ ·32289	·46409	·32154	+ ·01390	+ ·33436
44 F	78	Gāmbar ...	30 45 19	73 19 50	·45717	·32650	+ ·01671	+ ·31957	·46269	·32273	+ ·01390	+ ·33127
	63(*a*)	Orki (Sujawalpur) ...	30 8 40	73 54 30	·45496	·33042	+ ·01717	+ ·31226	·46045	·32695	+ ·01408	+ ·32391
	62	Rojhanwāli ...	30 0 50	73 15 40	·45180	·32959	+ ·01537	+ ·30864	·45723	·32603	+ ·01246	+ ·32031
44 G	246	Ganeshgarh ...	29 45 0	73 54 0	·45248	·33172	+ ·01633	+ ·30730	·45792	·32834	+ ·01319	+ ·31891
	247	Lalgarh ...	29 38 21	73 22 59	·45041	·33125	+ ·01498	+ ·30483	·45589	·32785	+ ·01201	+ ·31656
	127	Sūratgarh ...	29 19 30	73 54 30	·45044	·33386	+ ·01467	+ ·30203	·45596	·33070	+ ·01148	+ ·31370
	237	Walar ...	29 15 30	73 1 40	·44740	·33212	+ ·01377	+ ·29946	·45289	·32883	+ ·01087	+ ·31122
	236	Balochia ...	29 14 50	73 27 20	·44877	·33362	+ ·01460	+ ·29978	·45423	·33038	+ ·01158	+ ·31152

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
44 H	248	Gegra ...	28 49 10	73 15 0	·44500	·33466	+ ·01454	+ ·29295	·45041	·33159	+ ·01145	+ ·30461
	126	Mahajan ...	28 47 40	73 50 40	·44619	·33552	+ ·01386	+ ·29381	·45160	·33252	+ ·01061	+ ·30537
	249	Kālasar ...	28 28 0	73 15 20	·44556	·33671	+ ·01372	+ ·29148	·45105	·33375	+ ·01063	+ ·30322
	125	Dulmera ...	28 24 20	73 39 20	·44453	·33703	+ ·01292	+ ·28956	·44989	·33413	+ ·00972	+ ·30111
	XXIX	BĪKANER ...	28 0 40	73 18 50	·44263	·33889	+ ·01225	+ ·28448	·44800	·33609	+ ·00909	+ ·29608
44 I	98	Amritsar ...	31 38 10	74 51 30	·46208	·32278	+ ·01654	+ ·33024	·46737	·31880	+ ·01350	+ ·34150
	XXV	LAHORE ...	31 35 50	74 18 50	·46173	·32078	+ ·01661	+ ·33170	·46726	·31680	+ ·01368	+ ·34320
44 J	434	Ferozepore ...	30 57 52	74 36 10	·45715	·32341	+ ·01416	+ ·32280	·46254	·31963	+ ·01110	+ ·33415
	64	Malout ...	30 11 0	74 29 40	·45531	·33043	+ ·01578	+ ·31286	·46077	·32694	+ ·01254	+ ·32444
44 K	235	Sangaria ...	29 47 50	74 27 40	·45393	·33258	+ ·01395	+ ·30863	·45944	·32930	+ ·01067	+ ·32021
	267	Mirjawali ...	29 20 40	74 30 20	·45088	·33416	+ ·01390	+ ·30239	·45628	·33099	+ ·01055	+ ·31388
44 L	266	Saringsar ...	28 54 40	74 28 30	·44917	·33633	+ ·01405	+ ·29737	·45457	·33334	+ ·01063	+ ·30887
	265	Sardārshahr ...	28 26 10	74 28 50	·44549	·33765	+ ·01446	+ ·29025	·45089	·33488	+ ·01097	+ ·30172
	271	Fatehpur ...	28 0 30	74 57 20	·44646	·34084	+ ·01141	+ ·28814	·45186	·33821	+ ·00775	+ ·29954
44 M	99	Dhārīwal ...	31 57 10	75 18 50	·46409	·31987	+ ·01525	+ ·33590	·46966	·31588	+ ·01215	+ ·34734
	1303	Hoshiārpur ...	31 31 50	75 54 20	·46200	·32419	+ ·01737	+ ·32870	·46738	·32045	+ ·01401	+ ·33994
	70	Kartārpur ...	31 26 10	75 29 30	·46308	·32456	+ ·01683	+ ·32989	·46861	·32081	+ ·01352	+ ·34130
44 N	69	Ladhowāl ...	30 59 0	75 47 20	·46133	·32720	+ ·01653	+ ·32480	·46684	·32361	+ ·01310	+ ·33623
	435	Moga ...	30 49 40	75 10 30	·45993	·32771	+ ·01636	+ ·32229	·46540	·32407	+ ·01303	+ ·33379
	66	Alāl ...	30 21 46	75 43 50	·45848	·33032	+ ·01564	+ ·31756	·46399	·32696	+ ·01210	+ ·32900
	65	Bhuchchu ...	30 12 47	75 5 30	·45695	·33102	+ ·01504	+ ·31465	·46249	·32765	+ ·01165	+ ·32620
44 O	284	Budhlāda ...	29 55 30	75 33 20	·45409	·33174	+ ·01467	+ ·30973	·45950	·32853	+ ·01107	+ ·32107
	XLIII	SIRSA ...	29 32 10	75 2 40	·45247	·33368	+ ·01547	+ ·30520	·45797	·33060	+ ·01191	+ ·31672
	282	Adampur ...	29 17 20	75 27 50	·45089	·33438	+ ·01339	+ ·30218	·45629	·33138	+ ·00973	+ ·31351
	281	Hānsi ...	29 5 40	75 57 0	·45166	·33673	+ ·01404	+ ·30068	·45699	·33386	+ ·01025	+ ·31189
44 P	268	Malsisar ...	28 58 20	75 1 30	·44868	·33566	+ ·01425	+ ·29739	·45401	·33273	+ ·01068	+ ·30873
	269	Sūrpura ...	28 40 17	75 37 0	·44863	·33785	+ ·01365	+ ·29486	·45396	·33508	+ ·00985	+ ·30610
	270	Tamkor ...	28 26 20	75 15 10	·44779	·33970	+ ·01360	+ ·29143	·45311	·33699	+ ·00989	+ ·30273
	275	Koharwas ...	28 15 40	75 57 30	·44660	·34086	+ ·01367	+ ·28823	·45174	·33827	+ ·00973	+ ·29925
45 A	252	Hodda ...	27 37 50	72 52 30	·44029	·33968	+ ·01193	+ ·27987	·44567	·33698	+ ·00889	+ ·29152
	22	Nokh ...	27 33 30	72 15 20	. .	...	...	...	...	...	...	...
	253	Ranisar ...	27 12 40	72 42 40	·43597	·34054	+ ·01231	+ ·27194	·44130	·33800	+ ·00926	+ ·28357
	21 (a)	Phalodi ...	27 7 30	72 21 20	·43479	·34132	+ ·01206	+ ·26907	·43998	·33871	+ ·00912	+ ·28066
45 B	20	Asolai ...	26 42 10	72 15 50	·42957	·33942	+ ·00126	+ ·26328	·43476	·33690	− ·00158	+ ·27480
	255	Khethasar ...	26 41 0	72 49 20	·43658	·34499	+ ·01087	+ ·26732	·44194	·34267	+ ·00775	+ ·27897
	19 (a)	Sai ...	26 16 50	72 16 20	·43277	·34923	+ ·01255	+ ·25529	·43781	·34696	+ ·00949	+ ·26685
45 C	258	Dundāra ...	25 53 40	72 47 50	·43013	·34606	+ ·00882	+ ·25530	·43529	·34393	+ ·00559	+ ·26675
	259	Bālotra ...	25 50 10	72 14 40	·43993	·34970	+ ·00864	+ ·26677	·44555	·34751	+ ·00555	+ ·27878
	405	Jalar ...	25 21 10	72 36 50	·42796	·34945	+ ·00776	+ ·24691	·43316	·34754	+ ·00451	+ ·25851
45 D	404	Lohana ...	24 47 20	72 27 10	·42637	·35245	+ ·00970	+ ·23975	·43163	·35078	+ ·00642	+ ·25143
	148	Abu Road ...	24 29 0	72 46 40	·42482	·35351	+ ·00911	+ ·23543	·43007	·35199	+ ·00577	+ ·24704
	118	Roho ...	24 24 20	72 38 20	·42394	·35385	+ ·00851	+ ·23333	·42916	·35234	+ ·00517	+ ·24497
	117	Deesa ...	24 14 30	72 10 40	·42397	·35416	+ ·00796	+ ·23292	·42925	·35263	+ ·00473	+ ·24471
45 E	123	Bikasar ...	27 34 20	73 28 0	·44038	·34120	+ ·01142	+ ·27818	·44577	·33861	+ ·00815	+ ·28980
	254	Panchora ...	27 6 40	73 13 30	·43866	·34270	+ ·00810	+ ·27370	·44401	·34020	+ ·00490	+ ·28529
	122	Mūndwa ...	27 3 50	73 48 30	·43780	·34308	+ ·01149	+ ·27173	·44310	·34071	+ ·00810	+ ·28317
45 F	121	Khāngta ...	26 33 30	73 37 20	·43589	·34561	+ ·01167	+ ·26538	·44106	·34334	+ ·00825	+ ·27673
	256	Jodhpur ...	26 16 20	73 1 30	·43387	·34650	+ ·00823	+ ·26099	·43905	·34425	+ ·00500	+ ·27244
45 G	132	Sojat Road ...	25 52 0	73 45 10	·43146	·34809	+ ·01033	+ ·25472	·43664	·34615	+ ·00680	+ ·26605
	257	Marwar Pāli ...	25 47 50	73 19 30	·43102	·34782	+ ·00961	+ ·25437	·43625	·34588	+ ·00620	+ ·26578
	120	Rāni ...	25 21 10	73 18 20	·42919	·35040	+ ·00872	+ ·24769	·43436	·34862	+ ·00528	+ ·25906
	633	Lāwa ...	25 14 10	73 59 30	·42960	·34984	+ ·01108	+ ·24907	·43493	·34826	+ ·00747	+ ·26043
45 H	119(a)	Pindwāra ...	24 48 0	73 2 10	·42499	·35084	+ ·00951	+ ·23967	·43017	·34922	+ ·00608	+ ·25110
	I	UDAIPUR ...	24 34 42	73 42 46	·42504	·35261	+ ·00872	+ ·23716	·43037	·35127	+ ·00510	+ ·24859
	634	Bichabhera ...	24 16 20	73 22 50	·42489	·35402	+ ·00760	+ ·23482	·43021	·35266	+ ·00403	+ ·24636
45 I	264	Bana ...	27 58 40	74 1 50	·44266	·33945	+ ·01274	+ ·28384	·44802	·33677	+ ·00937	+ ·29533
	272	Singrawat ...	27 26 10	74 52 50	·44242	·34346	+ ·01105	+ ·27864	·44766	·34105	+ ·00738	+ ·28988
	263	Dugoli ...	27 22 0	74 10 20	·43973	·34215	+ ·01255	+ ·27594	·44494	·33970	+ ·00904	+ ·28722
45 J	128	Gachhipura ...	26 57 20	74 27 50	·43783	·34431	+ ·01175	+ ·27020	·44302	·34202	+ ·00807	+ ·28146
	XXX	AJMER ...	26 27 30	74 38 30	·43567	·34635	+ ·01222	+ ·26401	·44085	·34433	+ ·00846	+ ·27516
	131(a)	Beāwar ...	26 26 40	74 18 30	·43261	·34726	+ ·01074	+ ·25777	·43774	·34529	+ ·00704	+ ·26897
45 K	160	Māndal ...	25 26 50	74 35 10	·42504	·34690	+ ·01465	+ ·24516	·43016	·34537	+ ·01083	+ ·25620

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
45 L	159	Kapasin ...	24 51 30	74 18 40	·42647	·35149	+ ·01090	+ ·24128	·43175	·35013	+ ·00717	+ ·25251
	158	Nīmbahera ...	24 37 20	74 41 40	·42800	·35266	+ ·01001	+ ·24230	·43346	·35146	+ ·00611c	+ ·25362
	640	Kānor ...	24 26 0	74 16 10	·42539	·35357	+ ·00978	+ ·23634	·43073	·35236	+ ·00598	+ ·24766
45 M	274	Gūdha ...	27 51 40	75 31 40	·44336	·34155	+ ·01283	+ ·28239	·44855	·33906	+ ·00895	+ ·29353
	277	Shahpura ...	27 23 30	75 58 0	·44004	·34254	+ ·01090	+ ·27601	·44508	·34024	+ ·00692	+ ·28687
	278	Khatu ...	27 22 10	75 24 10	·43879	·34236	+ ·01226	+ ·27420	·44392	·34008	+ ·00838	+ ·28519
45 N	162	Jaipur ...	26 55 0	75 47 0	·44084	·34523	+ ·01206	+ ·27387	·44608	·34316	+ ·00804	+ ·28489
	129	Sāmbhar ...	26 54 20	75 11 10	·44167	·34501	+ ·01329	+ ·27544	·44703	·34290	+ ·00943	+ ·28665
	161	Naraina ...	26 47 30	75 11 50	·44071	·34502	+ ·01115	+ ·27397	·44609	·34295	+ ·00730	+ ·28517
	608	Jhalāi ...	26 21 30	75 59 50	·43830	·34996	+ ·01205	+ ·26360	·44352	·34818	+ ·00787	+ ·27461
	609	Mālpura ...	26 17 0	75 22 10	·43537	·34716	+ ·01052	+ ·26253	·44060	·34529	+ ·00654	+ ·27360
45 O	610	Awan ...	25 48 0	75 36 20	·43292	·34871	+ ·01126	+ ·25631	·43815	·34714	+ ·00722	+ ·26725
	612	Kotah ...	25 11 30	75 51 40	·43245	·35218	+ ·00995	+ ·25078	·43782	·35086	+ ·00582	+ ·26182
45 P	613	Singoli ...	24 58 10	75 17 20	·42938	·35137	+ ·00974	+ ·24660	·43484	·35016	+ ·00574	+ ·25776
	614	Rāmpura ...	24 27 40	75 26 40	·42869	·35630	+ ·00899	+ ·23820	·43404	·35525	+ ·00482	+ ·24932
	157	(Panth) Pīplia .	24 12 20	75 0 40	·42528	·35879	+ ·00832	+ ·22818	·43048	·35786	+ ·00434	+ ·23922
	616	Kundio ...	24 2 0	75 53 30	·42410	·35631	+ ·00968	+ ·22980	·42940	·35556	+ ·00540	+ ·24070
46 A	116 (*a*)	Kherālu ...	23 52 40	72 37 20	·42118	·35534	+ ·00775	+ ·22599	·42639	·35404	− ·00440	+ ·23759
	115	Pātan ...	23 51 0	72 8 10	·42155	·35502	+ ·00437	+ ·22726	·42683	·35362	+ ·00114	+ ·23902
	114	Jagudan ...	23 30 50	72 24 0	·41842	·35437	+ ·00773	+ ·22234	·42364	·35312	+ ·00439	+ ·23401
	113	Parāntij ...	23 25 40	72 51 50	·42115	·35745	+ ·00890	+ ·22252	·42641	·35633	− ·00535	+ ·23416
	XXXII	VIRAMGĀM ...	23 8 10	72 3 30	·41722	·35662	+ ·00722	+ ·21644	·42239	·35543	+ ·00392	+ ·22818
46 B	112	Bārejadi ...	22 53 40	72 40 20	·41676	·35719	+ ·00585	+ ·21465	·42207	·35626	+ ·00231	+ ·22630
	111	Cambay ...	22 19 20	72 38 0	·41564	·36071	+ ·00650	+ ·20640	·42087	·35996	+ ·00292	+ ·21807
46 C	186	Bhāvnagar ...	21 46 40	72 7 40	·41421	·36577	+ ·00202	+ ·19437	·41924	·36508	− ·00159	+ ·20609
	XXVIII	SACHIN ...	21 4 40	72 52 40	·41125	·36519	+ ·00311	+ ·18909	·41655	·36501	− ·00081	+ ·20072
46 D	104	Pārdi ...	20 31 0	72 55 40	·40672	·36402	+ ·01035	+ ·18112	·41199	·36412	+ ·00639	+ ·19264
46 E	635	Dhandolia ...	23 42 10	73 19 50	·42155	·35507	+ ·00720	+ ·22709	·42697	·35401	+ ·00356	+ ·23870
	637	Ghatauogam ...	23 35 30	73 53 50	·42150	·35645	+ ·00835	+ ·22481	·42685	·35551	+ ·00458	+ ·23621
	686	Debhari ...	23 15 20	73 30 10	·41925	·35741	+ ·00717	+ ·21902	·42455	·35652	+ ·00345	+ ·23049
46 F	153	Chanchēlāo ...	22 47 50	73 42 40	·41707	·35816	+ ·00643	+ ·21360	·42244	·35753	+ ·00259	+ ·22501
	152	Dākor ...	22 45 10	73 9 10	·41683	·35917	+ ·00945	+ ·21133	·42207	·35839	+ ·00577	+ ·22284
	109	Bodeli ...	22 16 20	73 42 50	·42099	·36386	+ ·00683	+ ·21165	·42651	·36339	+ ·00293	+ ·22329
	110	Itola ...	22 9 10	73 9 40	·41457	·36086	+ ·00652	+ ·20398	·41985	·36033	+ ·00277	+ ·21547
	626	Artia ...	22 2 40	73 58 20	·42367	·36470	+ ·00263	+ ·21559	·42945	·36436	− ·00145	+ ·22730
46 G	108	Nāndod ...	21 53 20	73 28 30	·41400	·36222	+ ·00636	+ ·20037	·41940	·36191	+ ·00248	+ ·21192
	107 (*a*)	Anklesvar ...	21 37 30	73 0 30	·41526	·36430	+ ·00437	+ ·19927	·42063	·36391	+ ·00058	+ ·21095
	106	Fort Songhad ...	21 8 50	73 33 30	·41490	·36783	+ ·00327	+ ·19191	·42027	·36776	− ·00085	+ ·20342
46 H	630	Baphlun ...	20 32 50	73 29 30	·40473	·36341	+ ·00739	+ ·17800	·40993	·36361	+ ·00332	+ ·18926
	631	Kanāsi ...	20 31 30	73 52 0	·40683	·36551	+ ·00620	+ ·17853	·41205	·36579	+ ·00199	+ ·18968
	629	Peint ...	20 15 20	73 29 10	·40840	·36733	+ ·00363	+ ·17844	·41375	·36759	− ·00053	+ ·18992
	628	Girdan ...	20 5 20	73 25 50	·40597	·36308	+ ·00523	+ ·18154	·41149	·36340	+ ·00111	+ ·19305
	224	Khervādi ...	20 2 50	73 58 10	·40656	·36611	+ ·00453	+ ·17672	·41190	·36653	+ ·00026	+ ·18791
46 I	639	Mānpur ...	23 59 50	74 14 40	·42807	·35822	+ ·01202	+ ·23405	·43358	·35726	+ ·00816	+ ·24554
	638	Bānswāra ...	23 33 10	74 25 50	·42325	·35825	+ ·01002	+ ·22515	·42868	·35750	+ ·00605	+ ·23647
	155	Bhairongarh ...	23 9 0	74 46 40	·43240	·37013	+ ·00685	+ ·22347	·43795	·36956	+ ·00264	+ ·23497
46 J	154	Dohad ...	22 50 20	74 14 50	·41778	·35905	+ ·00637	+ ·21352	·42314	·35847	+ ·00241	+ ·22481
	625	Sondwa ...	22 7 10	74 22 20	·41255	·36183	+ ·00654	+ ·19808	·41778	·36164	+ ·00243	+ ·20917
	624	Chikalda ...	22 5 0	74 52 40	·41578	·36308	+ ·00533	+ ·20251	·42113	·36294	+ ·00110	+ ·21361
46 K	554	Nandurbār ...	21 22 30	74 14 40	·41772	·36246	+ ·00547	+ ·19520	·41716	·36247	+ ·00130	+ ·20650
	553	Sindkheda ...	21 14 13	74 44 20	·41358	·36724	+ ·00489	+ ·19016	·41889	·36741	+ ·00055	+ ·20119
46 L	226	Dhūlia ...	20 53 10	74 46 20	·40990	·36652	+ ·00438	+ ·18347	·41513	·36680	− ·00001	+ ·19439
	632	Jaykhera ...	20 47 40	74 12 10	·41146	·36710	+ ·00473	+ ·18580	·41684	·36732	+ ·00045	+ ·19705
	XLI	MANMĀD ...	20 14 40	74 26 20	·40545	·36632	+ ·00640	+ ·17367	·41060	·36678	+ ·00202	+ ·18457
46 M	1327	Alot ...	23 45 30	75 32 40	·42565	·35754	+ ·00380	+ ·23093	·43117	·35682	− ·00037	+ ·24204
	156	Jaorā ...	23 38 0	75 7 0	·42222	·35652	+ ·00808	+ ·22606	·42762	·35580	+ ·00396	+ ·23716
	558	Barnagar ...	23 3 50	75 22 30	·42233	·35889	+ ·00796	+ ·22247	·42795	·35852	+ ·00376	+ ·23365
46 N	LVI	INDORE ...	22 42 8	75 52 40	·42721	·36738	+ ·00570	+ ·21796	·43275	·36719	+ ·00117	+ ·22901
	623	Dhār ...	22 36 0	75 18 30	·42444	·36737	+ ·00436	+ ·21255	·42987	·36710	+ ·00001	+ ·22368
	622	Khal Ghat ...	22 8 50	75 27 10	·40355	·33758	+ ·01121	+ ·22082	·40966	·33762	+ ·00716	+ ·23190
46 O	621	Bistān ...	21 41 50	75 40 10	·42543	·37603	+ ·00643	+ ·19887	·43087	·37625	+ ·00181	+ ·20995
	929	Sendhwa ...	21 40 50	75 5 20	·41861	·36667	+ ·00452	+ ·20191	·42409	·36667	+ ·00018	+ ·21307
	XVI	BHUSĀWAL ...	21 3 40	75 47 0	·41328	·36766	+ ·00455	+ ·18869	·41861	·36805	− ·00004	+ ·19943

Note:—Y is + or—according as Declination is East or West. Z is + or—according as Dip is towards the North or South

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0				1920·0			
					Total Force F	Components North X	Components E. or W. Y	Components Vertical Z	Total Force F	Components North X	Components E. or W. Y	Components Vertical Z
					cgs	cgs	cgs	cgs	cgs	cgs	cgs	cgs
			° ′ ″	° ′ ″								
46 O	555	Jālgaon ...	21 1 20	75 33 40	·41087	·36521	+ ·00446	+ ·18819	·41625	·36559	− ·00003	+ ·19902
46 P	227	Chalisgaon ...	20 27 30	75 1 0	·40592	·36597	+ ·00467	+ ·17555	·41101	·36641	+ ·00017	+ ·18620
	1161	Sillod ...	20 18 40	75 38 50	·40859	·36890	+ ·00099	+ ·17565	·41377	·36945	− ·00368	+ ·18628
47 A	103	Dāhānu Road ...	19 58 40	72 44 40	·40486	·36711	+ ·00717	+ ·17057	·41001	·36733	+ ·00317	+ ·18210
	102	Virār ...	19 27 10	72 48 30	·39950	·36367	+ ·00085	+ ·16536	·40472	·36404	− ·00323	+ ·17680
47 B		**ALIBAG OBSY.** ...	18 38 17	72 52 26	·40079	·36768	+ ·00649	+ ·15939	·40655	·36878	+ ·00224	+ ·17110
	689	Revadanda ...	18 32 20	72 57 0	·39840	·36775	+ ·00477	+ ·15317	·40348	·36844	+ ·00048	+ ·16445
47 E	627	Jawhār ...	19 54 0	73 13 30	·40618	·36729	+ ·00185	+ ·17342	·41146	·36758	− ·00227	+ ·18488
	225	Igatpuri ...	19 41 20	73 34 40	·40065	·36428	+ ·00319	+ ·16676	·40584	·36475	− ·00106	+ ·17793
	169	Kalyān ...	19 15 0	73 8 20	·40598	·36743	− ·00208	+ ·17264	·41150	·36789	− ·00626	+ ·18425
	1322	Narayangaon ...	19 6 40	73 58 10	·40233	·36822	+ ·00612	+ ·16199	·40752	·36894	+ ·00171	+ ·17307
	1320	Ghoda ...	19 3 10	73 49 50	·40010	·36776	+ ·00050	+ ·15758	·40516	·36842	− ·00391	+ ·16855
	648	Manchar ...	19 0 30	73 56 40	·39901	·36901	+ ·00220	+ ·15177	·40385	·36968	− ·00223	+ ·16255
47 F	1319	Khed ...	18 51 30	73 53 20	·40240	·36905	+ ·00435	+ ·16036	·40761	·36979	− ·00008	+ ·17144
	170 (*a*)	Lonāvla ...	18 44 40	73 23 40	·40443	·37282	+ ·00064	+ ·15673	·40955	·37347	− ·00377	+ ·16806
	171 (*a*)	Kirkee ...	18 33 30	73 50 0	·39932	·36864	+ ·00063	+ ·15351	·40430	·36933	− ·00385	+ ·16442
47 G	688	Bānkot ...	17 58 20	73 2 30	·39607	·36749	+ ·00424	+ ·14768	·40109	·36833	− ·00010	+ ·15876
	436	Mahābaleshwar ...	17 55 50	73 39 40	·39446	·36797	− ·00074	+ ·14210	·39928	·36887	− ·00522	+ ·15277
	687	Dābhol ...	17 35 20	73 10 0	·39457	·37151	− ·00168	+ ·13289	·39920	·37239	− ·00620	+ ·14370
	437	Helwak ...	17 22 20	73 43 10	·39411	·37107	+ ·00342	+ ·13273	·39877	·37217	− ·00120	+ ·14319
	1313	Jaygad ...	17 17 50	73 13 20	·39549	·37167	+ ·00038	+ ·13518	·40023	·37262	− ·00420	+ ·14600
47 H	686	Ratnāgiri ...	16 59 10	73 18 50	·39392	·37573	+ ·00401	+ ·11826	·39822	·37684	− ·00067	+ ·12873
	438	Amba ...	16 58 20	73 47 50	·39444	·37144	+ ·00093	+ ·13272	·39919	·37262	− ·00376	+ ·14316
	1314	Mūsā-Kazi-Bandar ...	16 37 10	73 20 0	·39452	·37450	− ·00292	+ ·12407	·39913	·37568	− ·00766	+ ·13456
	439	Dajeepur ...	16 22 40	73 52 40	·39486	·37543	− ·00062	+ ·12231	·39942	·37675	− ·00549	+ ·13254
	685	Devgarh ...	16 21 50	73 21 50	·38673	·36762	+ ·00231	+ ·12005	·39122	·36888	− ·00233	+ ·13031
	1315	Mālvan ...	16 3 30	73 27 20	·39121	·37417	− ·00260	+ ·11417	·39556	·37540	− ·00746	+ ·12441
47 I	371	Ratagaon or (Vaijāpur)	19 56 40	74 45 50	·41025	·37027	+ ·00273	+ ·17663	·41560	·37084	− ·00183	+ ·18760
	222	Puntāmba ...	19 45 40	74 37 20	·40322	·36667	+ ·00372	+ ·16773	·40839	·36730	− ·00079	+ ·17852
	649	Sangamner ...	19 34 20	74 13 30	·40227	·36749	+ ·00208	+ ·16361	·40730	·36804	− ·00232	+ ·17444
	1325	Miri ...	19 17 0	74 58 0	·40361	·36914	+ ·00171	+ ·16321	·40875	·36991	− ·00296	+ ·17388
	221	Ahmadnagar ...	19 4 20	74 43 10	·40270	·37021	+ ·00158	+ ·15847	·40772	·37098	− ·00303	+ ·16912
	1321	Singwa ...	19 0 0	74 4 20	·40202	·37026	+ ·00009	+ ·15662	·40703	·37095	− ·00441	+ ·16749
47 J	XXXIII	DHOND ...	18 28 0	74 35 10	·40018	·37066	+ ·00320	+ ·15081	·40507	·37156	− ·00148	+ ·16134
	220	Rajewadi ...	18 23 0	74 8 30	·39915	·36876	− ·00617	+ ·15268	·40418	·36954	− ·01079	+ ·16336
47 K	672	Nāteputa ...	17 54 10	74 45 30	·39744	·37127	− ·00035	+ ·14185	·40225	·37233	− ·00510	+ ·15215
	219	Wathar ...	17 53 20	74 8 10	·39691	·37058	+ ·00162	+ ·14215	·40172	·37156	− ·00300	+ ·15268
	673	Kaledhon ...	17 26 0	74 37 40	·39807	·37364	+ ·00122	+ ·13731	·40280	·37477	− ·00363	+ ·14758
	218	Karād ...	17 18 40	74 13 10	·39650	·37354	+ ·00040	+ ·13295	·40114	·37466	− ·00438	+ ·14327
47 L	XL	MIRAJ ...	16 49 10	74 38 10	·39900	·37649	− ·00010	+ ·13213	·40373	·37776	− ·00504	+ ·14234
	217	Kolhāpur ...	16 41 50	74 14 10	·39489	·37549	+ ·00118	+ ·12225	·39938	·37678	− ·00368	+ ·13239
	215	Gokāk Road ...	16 14 0	74 44 40	·39396	·37627	+ ·00026	+ ·11672	·39844	·37776	− ·00486	+ ·12657
47 M	373	Jālna ...	19 51 50	75 53 0	·40774	·36971	+ ·00482	+ ·17187	·41298	·37053	+ ·00003	+ ·18238
	372	Aurangābād ...	19 51 30	75 20 20	·40810	·36926	+ ·00425	+ ·17371	·41337	·36996	− ·00041	+ ·18441
	1323	Jamkhed ...	19 39 40	75 39 0	·40617	·37042	+ ·00466	+ ·16660	·41130	·37123	− ·00014	+ ·17707
	1324	Paithān ...	19 28 30	75 22 50	·40799	·37190	+ ·00419	+ ·16770	·41314	·37266	− ·00051	+ ·17835
	651	Shagad ...	19 22 0	75 42 40	·40720	·37246	+ ·00103	+ ·16457	·41231	·37328	− ·00380	+ ·17505
	650	Shevgaon ...	19 21 20	75 14 0	·40587	·37025	+ ·00359	+ ·16625	·41106	·37104	− ·00109	+ ·17693
47 N	660	Mīrajgaon ...	18 44 0	75 1 20	·40125	·37089	+ ·00360	+ ·15303	·40615	·37180	− ·00114	+ ·16347
	652	Chousalla ...	18 42 50	75 41 40	·39855	·36894	+ ·00325	+ ·15072	·40330	·36995	− ·00153	+ ·16083
	173	Jeur ...	18 15 50	75 9 40	·39990	·37183	+ ·00065	+ ·14718	·40478	·37286	− ·00418	+ ·15751
	174	Bārsi ...	18 14 30	75 42 20	·39954	·37174	+ ·00214	+ ·14641	·40444	·37290	− ·00280	+ ·15655
47 O	671	Pandharpur ...	17 39 40	75 19 30	·39779	·37212	+ ·00459	+ ·14050	·40259	·37335	− ·00035	+ ·15062
	670	Jath ...	17 2 40	75 12 0	·39625	·37455	− ·00065	+ ·12933	·40089	·37588	− ·00570	+ ·13927
47 P	661	Bijāpur ...	16 50 0	75 43 20	·39274	·37310	+ ·00087	+ ·12262	·39728	·37460	− ·00434	+ ·13225
	669	Jamkhandi ...	16 30 50	75 17 10	·39701	·37829	− ·00340	+ ·12038	·40154	·37974	− ·00863	+ ·13021
	667	Almati ...	16 21 10	75 53 20	·39409	·37571	− ·00095	+ ·11897	·39869	·37735	− ·00627	+ ·12851
	668	Karkop ...	16 1 10	75 6 0	·39388	·37722	− ·00005	+ ·11335	·39835	·37883	− ·00526	+ ·12306
48 E	684	Vengurla ...	15 51 30	73 37 20	·39120	·37547	− ·00092	+ ·10980	·39549	·37683	− ·00579	+ ·11988
	212	Marmagao ...	15 24 20	73 47 20	·38888	·37401	− ·00168	+ ·10325	·39304	·37637	− ·00667	+ ·11310
48 I	214	Belgaum ...	15 50 30	74 31 10	·38936	·37356	− ·00251	+ ·10075	·39370	·37508	− ·00761	+ ·11944
	440	Ramghat ...	15 49 40	74 6 20	·38130	·36586	+ ·00219	+ ·10738	·38558	·36738	− ·00266	+ ·11706
	213	Castle Rock ...	15 24 0	74 18 50	·39381	·38130	− ·00293	+ ·09845	·39792	·38286	− ·00783	+ ·10818
48 J	441	Yellāpur ...	14 57 40	74 42 30	·38859	·37628	− ·00240	+ ·09699	·39283	·37806	− ·00772	+ ·10641
	683	Kārwār ...	14 47 31	74 7 20	·38839	·37667	− ·00207	+ ·09470	·39253	·37835	− ·00728	+ ·10432

Note:—Y is + or − according as Declination is East or West, Z is + or − according as Dip is towards the North or South.

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
48 J	1318	Tadri ...	14 31 20	74 21 30	·38611	·37455	− ·00202	+ ·09371	·39027	·37634	− ·00731	+ ·10311
	682	Kūmta ...	14 26 0	74 24 50	·39457	·38470	+ ·00214	+ ·08767	·39858	·38654	− ·00328	+ ·09718
	1317	Chundanver ...	14 23 40	74 29 0	·38640	·37605	− ·00255	+ ·08883	·39047	·37787	− ·00787	+ ·09812
	1316	Honāvar ...	14 16 40	74 26 30	·38567	·37504	− ·00435	+ ·08598	·38968	·37775	− ·00968	+ ·09524
48 K	681	Bhatkal ...	13 59 30	74 32 0	·38009	·37419	− ·00714	+ ·06633	·38371	·37606	− ·01253	+ ·07516
	680	Cūndapur ...	13 37 30	74 41 40	·38671	·37918	− ·00268	+ ·07586	·39065	·38122	− ·00819	+ ·08490
	679	Udipi ...	13 20 40	74 44 20	·38332	·37618	− ·00194	+ ·07357	·38729	·37835	− ·00745	+ ·08247
48 L	678	Mangalore ...	12 52 0	74 49 40	·38122	·37505	− ·00759	+ ·06782	·38510	·37717	− ·01319	+ ·07658
	677	Kāsaragod ...	12 30 3	74 59 40	·38851	·38144	− ·00982	+ ·07313	·39262	·38365	− ·01565	+ ·08199
48 M	666	Alūr ...	15 49 30	75 39 0	·39360	·37735	− ·00139	+ ·11193	·39812	·37909	− ·00679	+ ·12140
	VIII	DHĀRWĀR ...	15 26 36	75 0 10	·39088	·37677	− ·00166	+ ·10406	·39518	·37845	− ·00693	+ ·11357
	665	Gadag ...	15 25 10	75 38 10	·39035	·37543	0	+ ·10687	·39482	·37730	− ·00543	+ ·11619
	211	Yalvigi ...	15 1 50	75 25 0	·38849	·37584	− ·00082	+ ·09835	·39276	·37769	− ·00626	+ ·10754
48 N	210	Rānībennur ...	14 37 0	75 38 30	·38882	·37789	− ·00222	+ ·09149	·39311	·37995	− ·00777	+ ·10054
	442	Banavāsi ...	14 32 20	75 1 10	·38789	·37704	− ·00230	+ ·09107	·39204	·37893	− ·00771	+ ·10024
48 O	443	Mauvinhala ...	13 59 10	75 6 20	·38641	·37753	− ·00228	+ ·08235	·39050	·37958	− ·00776	+ ·09138
	208	Shimoga ...	13 55 30	75 34 0	·38566	·37730	− ·00270	+ ·07984	·38981	·37952	− ·00830	+ ·08862
	XXXIX	BIRUR ...	13 35 50	75 58 10	·38676	·37898	− ·00344	+ ·07709	·39097	·38134	− ·00921	+ ·08575
	444	Koppa ...	13 31 50	75 19 30	·38575	37843	− ·00474	+ ·07467	·38984	·38066	− ·01038	+ ·08347
48 P	445	Beltangadi ...	12 59 10	75 17 0	·38411	·37809	− ·00480	+ ·06761	·38812	·38041	− ·01049	+ ·07626
	447	Sakleshpur ...	12 56 40	75 47 30	·38418	·37862	− ·00441	+ ·06496	38822	·38106	− ·01023	+ ·07348
	446	Sullia ...	12 34 20	75 23 20	·38280	·37789	− ·00405	+ ·06094	·38669	·38028	− ·00986	+ ·06944
	200	Vottekolli ...	12 7 20	75 50 20	·38212	·37816	− ·00611	+ ·05452	·38601	·38069	− ·01213	+ ·06272
	676	Kuvoy ...	12 5 40	75 11 30	·38551	·38043	+ ·00909	+ ·06169	38944	·38302	+ ·00332	+ ·07032
49 M	XXXVIII	CANNANORE ...	11 52 30	75 22 0	·38389	·37978	− ·00782	+ ·05551	·38778	·38223	− ·01382	+ ·06394
	198	West Hill ...	11 17 10	75 45 20	·39035	·38637	− ·00118	+ ·05561	·39436	·38907	− ·00737	+ ·06393
52 B	1258	Mulbekh ...	34 23 2	76 21 29	...	...	...	...	...	...	...	...
52 D	1301	Dharmsāla ...	32 12 0	76 19 30	·46781	·32083	+ ·01798	+ ·33999	·47338	·31693	+ ·01463	+ ·35132
	1300	Pālampur ...	32 7 20	76 32 20	·46794	·32145	+ ·01764	+ ·33960	·47348	·31761	+ ·01420	+ ·35086
52 F	1260	Pānāmik ...	34 47 0	77 33 40	...	...	...	...	...	...	...	...
	1259	Leh ...	34 9 30	77 34 15	...	..	...	...	...	...	...	...
52 I	1261	Kizil Langar ...	35 12 0	78 0 55	...	...	...	...	...	...	...	...
53 A	1299	Urla ...	31 55 20	76 53 10	·46814	·32392	+ ·01769	+ ·33752	·47357	·32015	+ ·01412	+ ·34867
	1302	Dera Gopipur ...	31 52 50	76 12 30	·46658	·32318	+ ·01844	+ ·33602	·47202	·31934	+ ·01497	+ ·34726
	1286	Hamīrpur ...	31 41 10	76 31 20	·46582	·32468	+ ·01762	+ ·33356	·47124	·32095	+ ·01410	+ ·34475
	1287	Galma ...	31 36 0	76 52 30	·46559	·32500	+ ·01740	+ ·33292	·47106	·32134	+ ·01378	+ ·34417
	1285	Bubhor ...	31 24 30	76 22 20	·46404	·32627	+ ·01770	+ ·32950	·46943	·32260	+ ·01416	+ ·34073
	1289	Sema or Semu ...	31 11 50	76 55 30	·46349	·32748	+ ·01703	+ ·32754	·46898	·32399	+ ·01329	+ ·33881
	1284	Abiana ...	31 5 30	76 33 10	·46239	·32801	+ ·01735	+ ·32543	·46769	·32445	+ ·01370	+ ·33656
53 B	287	Tokara ...	30 50 50	76 55 20	·46124	·32902	+ ·01646	+ ·32284	·46668	·32562	+ ·01271	+ ·33406
	68	Sirhind ...	30 37 40	76 22 40	·46064	·32994	+ ·01672	+ ·32100	·46606	·32654	+ ·01301	+ ·33228
	67	Patiāla ...	30 20 40	76 24 0	·45863	·33128	+ ·01643	+ ·31673	·46402	·32799	+ ·01272	+ ·32799
	101	Kesri ...	30 15 50	76 55 30	·45955	·33196	+ ·01615	+ ·31737	·46504	·32878	+ ·01222	+ ·32865
53 C	234	Tarāori ...	29 48 20	76 56 0	·45636	·33450	+ ·01537	+ ·31006	·46172	·33150	+ ·01136	+ ·32120
	285	Kalayat ...	29 41 10	76 13 40	·45205	·33235	+ ·01358	+ ·30612	·45732	·32925	+ ·00983	+ ·31724
	286	Karainthi ...	29 1 10	76 29 0	·45301	·33750	+ ·01244	+ ·30193	·45833	·33466	+ ·00844	+ ·31304
53 D	280	Dādri ...	28 36 10	76 16 40	·44872	·33785	+ ·01231	+ ·29506	·45399	·33513	+ ·00836	+ ·30616
	279	Rewāri ...	28 12 20	76 36 20	·44897	·34162	+ ·01271	+ ·29104	·45422	·33912	+ ·00860	+ ·30206
53 E	1298	Bajaora ...	31 50 50	77 9 50	·46687	·32359	+ ·01735	+ ·33609	·47240	·31991	+ ·01369	+ ·34731
	1297	Manglaur ..	31 40 0	77 17 50	·46665	·32433	+ ·01693	+ ·33508	·47220	·32072	+ ·01322	+ ·34633
	1296	Kot ...	31 31 0	77 25 10	·46581	·32565	+ ·01666	+ ·33265	·47135	·32209	+ ·01289	+ ·34389
	1294	Rāmpur ...	31 26 50	77 38 0	·46535	·32625	+ ·01620	+ ·33144	·47085	·32275	+ ·01238	+ ·34260
	1288	Pangna ...	31 23 10	77 7 20	·46569	·32805	+ ·01760	+ ·33007	·47110	·32450	+ ·01385	+ ·34124
	1295	Kotgarh ...	31 18 40	77 28 50	·46559	·32752	+ ·01640	+ ·33050	·47101	·32401	+ ·01256	+ ·34163
	1293	Sungri ...	31 18 40	77 41 50	·46506	·32708	+ ·01663	+ ·33019	·47050	·32365	+ ·01269	+ ·34127
	1292	Hat Koti ...	31 8 0	77 44 50	·46427	·32888	+ ·01704	+ ·32724	·46963	·32550	+ ·01307	+ ·33828
	1290	Jutogh ...	31 6 20	77 6 0	·46268	·32758	+ ·01638	+ ·32633	·46818	·32412	+ ·01264	+ ·33760
	1291	Bagund ...	31 6 7	77 27 30	·46401	·32856	+ ·01556	+ ·32729	·46948	·32516	+ ·01172	+ ·33845
53 F	1283	Nāhan ...	30 33 30	77 17 50	·46038	·33125	+ ·01614	+ ·31933	·46567	·32797	+ ·01222	+ ·33036
	165	Ambari ...	30 29 20	77 48 20	...	...	...	...	...	...	...	...
	164	Jhajra ...	30 20 30	77 54 50	...	...	...	...	...	...	...	...
	166	Mirzāpur ...	30 15 30	77 37 40	...	...	...	...	...	...	...	...
	167	Ghuna ...	30 3 50	77 34 40	...	...	...	...	...	...	...	...
	168	Fatehpur ...	30 2 40	77 45 40	...	...	...	...	...	...	...	...

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
53 G	229	Sahāranpur	29 57 50	77 32 40	·45881	·33427	+ ·01530	+ ·31390	·46425	·33126	+ ·01119	+ ·32506
	230	Muzaffarnagar ...	29 28 30	77 42 0	·45680	·33690	+ ·01455	+ ·30815	·46215	·33410	+ ·01032	+ ·31915
	233	Samālkha ...	29 14 40	77 0 10	·45345	·33678	+ ·01467	+ ·30299	·45862	·33397	+ ·01055	+ ·31413
53 H	231	Meerut City ...	28 58 40	77 41 0	·45237	·33873	+ ·01383	+ ·29951	·45747	·33604	+ ·00953	+ ·31026
	XLII	DELHI ...	28 40 15	77 13 48	·45118	·33967	+ ·01346	+ ·29665	·45645	·33709	+ ·00927	+ ·30762
	600	Chola ...	28 18 30	77 43 40	·44938	·34057	+ ·01344	+ ·29287	·45453	·33814	+ ·00907	+ ·30360
	1186	Palwal ...	28 8 50	77 19 50	·44808	·34204	+ ·01329	+ ·28915	·45322	·33967	+ ·00896	+ ·29992
53 I	1336	Jhala ...	31 1 50	78 42 50	·46370	·32875	+ ·01578	+ ·32663	·46906	·32553	+ ·01162	+ ·33751
53 J	1337	Barahat ...	30 44 30	78 27 10	·46241	·32976	+ ·01542	+ ·32380	·46790	·32665	+ ·01125	+ ·33481
	1331	Mussoorie ...	30 27 40	78 5 10	·46092	·33152	+ ·01544	+ ·31986	·46632	·32841	+ ·01132	+ ·33086
	1282	Tehrī ...	30 23 10	78 28 40	·46117	·33254	+ ·01538	+ ·31915	·46644	·32949	+ ·01114	+ ·32998
		DEHRA DUN OBSY.	30 19 19	78 3 19	·46026	·33221	+ ·01513	+ ·31819	·46618	·32954	+ ·01098	+ ·32955
	1281	Dungripont ...	30 14 10	78 52 0	·46090	·33350	+ ·01531	+ ·31776	·46613	·33057	+ ·01095	+ ·32847
53 K	1268	Pokhra ...	29 54 50	78 55 40	·45963	·33556	+ ·01493	+ ·31375	·46486	·33272	+ ·01050	+ ·32446
	1267	Chaumasu ...	29 54 0	78 44 0	·45929	·33536	+ ·01487	+ ·31346	·46449	·33252	+ ·01049	+ ·32415
	1266	Lansdowne ...	29 49 30	78 41 20	·45859	·33528	+ ·01465	+ ·31253	·46376	·33244	+ ·01027	+ ·32319
	228	Laksar ...	29 45 20	78 1 20	·45793	·33555	+ ·01461	+ ·31127	·46327	·33265	+ ·01040	+ ·32226
	602	Nagina ...	29 25 50	78 25 0	·45575	·33664	+ ·01461	+ ·30687	·46092	·33390	+ ·01022	+ ·31758
53 L	601	Morādābād ...	28 50 0	78 45 30	·45374	·34008	+ ·01381	+ ·30005	·45890	·33763	+ ·00922	+ ·31066
	599	Garhmuktesar ...	28 46 43	78 4 0	·45254	·33921	+ ·01450	+ ·29919	·45772	·33671	+ ·01009	+ ·30990
	587	Dhanāri ...	28 19 50	78 30 20	·45036	·34234	+ ·01238	+ ·29235	·45543	·34002	+ ·00784	+ ·30289
53 N	1280	Simili ...	30 13 50	79 15 20	·46149	·33404	+ ·01554	+ ·31802	·46672	·33117	+ ·01106	+ ·32869
53 O	1278	Kofkote ...	29 57 0	79 53 40	·46111	·33629	+ ·01503	+ ·31512	·46633	·33364	+ ·01043	+ ·32563
	1279	Baijnāth ...	29 54 40	79 36 50	·45980	·33590	+ ·01431	+ ·31366	·46503	·33323	+ ·00973	+ ·32421
	1269	Saraikhet ...	29 53 10	79 4 40	·45935	·33561	+ ·01487	+ ·31329	·46457	·33284	+ ·01038	+ ·32394
	1270	Masi ...	29 49 0	79 16 50	·45941	·33612	+ ·01450	+ ·31285	·46460	·33339	+ ·01001	+ ·32343
	1271	Rānikhet ..	29 38 50	79 26 0	·45863	·33671	+ ·01427	+ ·31107	·46383	·33404	+ ·00972	+ ·32166
	1272	Almorā ...	29 35 50	79 40 10	·45825	·33709	+ ·01444	+ ·31008	·46341	·33453	+ ·00984	+ ·32054
	1273	Maurnala ...	29 27 13	79 47 0	·45732	·33761	+ ·01427	+ ·30815	·46251	·33512	+ ·00960	+ ·31861
	1265	Rāmnagar ...	29 23 30	79 7 20	·45655	·33706	+ ·01387	+ ·30763	·46177	·33450	+ ·00938	+ ·31821
	LVIII	KATHGODAM ...	29 15 19	79 32 50	·45587	·33783	+ ·01403	+ ·30577	·46103	·33538	+ ·00937	+ ·31621
53 P	1304	Khatema ...	28 54 50	79 58 10	·45704	·34163	+ ·01306	+ ·30332	·46219	·33934	+ ·00825	+ ·31368
	597	Richha Road ...	28 43 0	79 29 30	·45484	·34222	+ ·01280	+ ·29934	·45991	·33987	+ ·00809	+ ·30974
	588	Aonla ...	28 17 50	79 10 10	·45046	·34256	+ ·01305	+ ·29223	·45556	·34037	+ ·00834	+ ·30268
	589	Mīrānpur Katra ...	28 2 20	79 40 20	·45064	·34421	+ ·01215	+ ·29061	·45569	·34217	+ ·00732	+ ·30086
54 A	276	Nangal Chaudhri ...	27 53 30	76 6 20	·44525	·34241	+ ·01015	+ ·28442	·45053	·33999	+ ·00617	+ ·29553
	278	Alwar ...	27 33 40	76 38 0	·44388	·34361	+ ·01293	+ ·28070	·44899	·34140	+ ·00870	+ ·29149
	163	Ārnu ...	27 0 0	76 28 50	·44116	·34599	+ ·01111	+ ·27348	·44634	·34397	+ ·00687	+ ·28436
54 B	607	Gangāpur ...	26 28 50	76 44 20	·43856	·34771	+ ·01242	+ ·26698	·44374	·34595	+ ·00809	+ ·27778
	1329	Siwai Madhopur ...	26 1 30	76 21 0	·43499	·34887	+ ·01054	+ ·25960	·44024	·34730	+ ·00627	+ ·27047
54 C	611	Indargarh ..	25 43 50	76 11 0	·43357	·34949	+ ·01011	+ ·25641	·43883	·34801	+ ·00589	+ ·26726
	LIV	BĀRAN ..	25 5 32	76 30 30	·43155	·35225	+ ·00904	+ ·24916	·43704	·35115	+ ·00469	+ ·26014
54 D	1328	Darah ...	24 50 0	76 0 50	·43061	·35407	+ ·00919	+ ·24489	·43598	·35298	+ ·00493	+ ·25586
	615	Jhālrapātan ...	24 36 0	76 9 20	·42925	·35427	+ ·00796	+ ·24225	·43475	·35334	+ ·00370	+ ·25329
	617	Khilchipur ...	24 2 0	76 34 20	·42853	·35915	+ ·00769	+ ·23365	·43396	·35849	+ ·00326	+ ·24453
54 E	1185	Nāndgaon ...	27 42 50	77 23 10	·44596	·34422	+ ·01275	+ ·28327	·45106	·34201	+ ·00841	+ ·29395
	VI	BHARATPUR ...	27 13 53	77 29 24	·44347	·34532	+ ·01213	+ ·27796	·44863	·34332	+ ·00772	+ ·28868
	585	Kherli ...	27 12 10	77 1 30	·44270	·34556	+ ·01238	+ ·27645	·44780	·34350	+ ·00803	+ ·28717
54 F	1330	Hindaun ...	26 45 30	77 2 10	·43989	·34674	+ ·01176	+ ·27044	·44506	·34490	+ ·00740	+ ·28119
	569	Dholpur ...	26 41 50	77 54 20	·44263	·34851	+ ·01038	+ ·27268	·44792	·34683	+ ·00584	+ ·28338
	606	Manakhar ...	26 24 30	77 16 10	·44843	·35553	+ ·01407	+ ·27292	·45380	·35389	+ ·00953	+ ·28390
	605	Birpur ...	26 7 30	77 8 20	·43882	·35082	+ ·01179	+ ·26335	·44409	·34932	+ ·00733	+ ·27411
54 G	536	Mahona ...	25 53 40	77 46 40	·43738	·35287	+ ·01008	+ ·25824	·44256	·35151	+ ·00549	+ ·26883
	604	Bargaon ...	25 40 10	77 3 10	·43392	·35050	+ ·00976	+ ·25561	·43925	·34920	+ ·00531	+ ·26642
	537	Sīpri ...	25 26 0	77 39 20	·43312	·35141	+ ·00883	+ ·25304	·43848	·35032	+ ·00427	+ ·26368
	603	Shāhābād ...	25 14 40	77 9 40	·43256	·35240	+ ·00945	+ ·25066	·43793	·35132	+ ·00499	+ ·26141
54 H	543	Dharnaoda ...	24 35 50	77 5 50	·42948	·35391	+ ·00965	+ ·24311	·43493	·35310	+ ·00517	+ ·25388
	542	Pachar ...	24 34 50	77 43 40	·43072	·35589	+ ·00733	+ ·24250	·43618	·35517	+ ·00272	+ ·25319
	618	Naiākila ...	24 3 40	77 15 30	·42533	·35342	+ ·01655	+ ·23606	·43085	·35299	+ ·01207	+ ·24676
54 I	586	Alīgarh ...	27 53 44	78 4 20	·44811	·34403	+ ·01225	+ ·28687	·45319	·34182	+ ·00775	+ ·29746
	584	Ganj Dūndwāra ...	27 43 30	78 56 20	·44806	·34515	+ ·01268	+ ·28542	·45318	·34316	+ ·00794	+ ·29588
	570	Agra Cantonment ...	27 10 40	78 0 20	·44354	·34638	+ ·01114	+ ·27682	·44868	·34448	+ ·00662	+ ·28742
	571	Shikohābād ...	27 4 30	78 35 30	·44456	·34752	+ ·01233	+ ·27697	·44974	·34576	+ ·00768	+ ·28750
54 J	538	Bhind ...	26 34 5	78 47 50	·44410	·34753	+ ·00649	+ ·27642	·44957	·34601	+ ·00176	+ ·28702

Note:—Y is + or—according as Declination is East or West. Z is + or—according as Dip is towards the North or South.

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
54 J	535	Gwalior ...	26 12 53	78 11 0	·43889	·35018	+ ·01229	+ ·26428	·44403	·34875	+ ·00761	+ ·27475
54 K	539	Datiā ...	25 38 40	78 27 30	·43406	·35312	+ ·00666	+ ·25232	·43916	·35198	+ ·00190	+ ·26260
	540	Basai ...	25 8 39	78 23 30	·43324	·35267	+ ·00748	+ ·25152	·43866	·35178	+ ·00273	+ ·26204
54 L	541 (*a*)	Lalitpur ...	24 41 10	78 25 50	·43580	·35898	+ ·00847	+ ·24696	·44127	·35833	+ ·00364	+ ·25750
	LV	BINA ...	24 10 50	78 11 0	·42567	·35672	+ ·00808	+ ·23210	·43100	·35627	+ ·00329	+ ·24253
54 M	590	Anjhi ...	27 38 20	79 50 20	·44900	·34663	+ ·01178	+ ·28515	·45401	·34481	+ ·00686	+ ·29527
	583	Farrukhābād ...	27 23 5	79 34 40	·44676	·34652	+ ·01155	+ ·28175	·45187	·34481	+ ·00669	+ ·29197
54 N	572	Alchulda ...	26 41 50	79 24 50	·44370	·34986	+ ·01110	+ ·27266	·44882	·34840	+ ·00620	+ ·28288
	574	Kālpī ..	26 7 0	79 45 50	·44112	·35330	+ ·01034	+ ·26394	·44626	·35217	+ ·00529	+ ·27404
54 O	575	Pūnch ...	25 40 0	79 2 50	·43770	·35285	+ ·00954	+ ·25882	·44290	·35175	+ ·00467	+ ·26909
	577	Mahobā ...	25 18 10	79 50 40	·43487	·35411	+ ·01025	+ ·25221	·44011	·35336	+ ·00514	+ ·26230
	576	Mau-Rānīpur ...	25 15 10	79 9 10	·43583	·35490	+ ·00893	+ ·25282	·44111	·35401	+ ·00392	+ ·26312
54 P	645	Chhatarpur ...	24 55 50	79 35 10	·43721	·35744	+ ·00937	+ ·25159	·44255	·35679	+ ·00427	+ ·26179
	644	Khurgapur ...	24 48 50	79 8 50	·43696	·35675	+ ·00877	+ ·25214	·44241	·35609	+ ·00374	+ ·26251
	643	Shāhgarh ...	24 19 10	79 7 20	·43254	·36081	+ ·00921	+ ·23838	·43790	·36044	+ ·00412	+ ·24863
55 A	560	Shujālpur ...	23 23 0	76 43 40	·42637	·35917	+ ·01038	+ ·22953	·43202	·35887	+ ·00584	+ ·24043
	559	Tarāna Road ...	23 15 40	76 3 50	·42010	·35734	+ ·00754	+ ·22075	·42551	·35695	+ ·00320	+ ·23160
55 B	619	Thuria ...	22 46 10	76 41 20	·41932	·36371	+ ·00759	+ ·20855	·42458	·36366	+ ·00299	+ ·21913
	620	Hāt Piplia ..	22 46 0	76 17 10	·42319	·36333	+ ·00273	+ ·21698	·42882	·36322	− ·00174	+ ·22793
	556	Barwāha ...	22 15 20	76 1 30	·41828	·36356	+ ·00613	+ ·20676	·42374	·36360	+ ·00166	+ ·21760
	550	Piplāni ...	22 7 10	76 47 30	·41618	·35841	+ ·00949	+ ·21132	·42185	·35865	+ ·00490	+ ·22206
55 C	551	Khandwā ...	21 49 20	76 21 50	·42175	·36629	+ ·00402	+ ·20899	·42749	·36658	− ·00061	+ ·21993
	797	Darni ...	21 32 40	76 53 10	·41653	·36819	+ ·00185	+ ·19476	·42188	·36856	− ·00292	+ ·20527
	552	Burhānpur ...	21 20 10	76 11 40	·41480	·36666	+ ·00598	+ ·19387	·42020	·36702	+ ·00136	+ ·20462
	798	Jiri ...	21 10 40	76 50 50	·41920	·36827	+ ·00411	+ ·20019	·42482	·36877	− ·00072	+ ·21090
55 D	781	Nāndūra ...	20 50 20	76 28 30	·41421	·37278	+ ·00534	+ ·18051	·41940	·37339	+ ·00051	+ ·19100
	1162	Deūlghāt ...	20 32 0	76 7 10	·40671	·36464	+ ·00329	+ ·18009	·41201	·36529	− ·00138	+ ·19056
	1163	Mehkar ...	20 9 10	76 35 10	·40690	·36595	+ ·00463	+ ·17785	·41220	·36676	− ·00017	+ ·18814
55 E	546	Bhīlsa ...	23 31 10	77 48 50	·42499	·35579	+ ·01465	+ ·23199	·43060	·35565	+ ·00998	+ ·24255
	547	Bhopāl ...	23 15 50	77 24 30	·42395	·35982	+ ·00760	+ ·22405	·42943	·35965	+ ·00294	+ ·23465
55 F	548	Hoshangābād ...	22 45 10	77 43 0	·42257	·36304	+ ·00631	+ ·21615	·42798	·36308	+ ·00149	+ ·22657
	549	Pagdhāl ...	22 24 50	77 21 10	·41976	·36234	+ ·00695	+ ·21178	·42530	·36255	+ ·00219	+ ·22234
	931	Dhar ...	22 21 20	77 51 20	·42158	·36632	+ ·00620	+ ·20858	·42700	·36657	+ ·00128	+ ·21898
	930	Bori ...	22 8 10	77 25 10	·41405	·36325	+ ·00659	+ ·19859	·41931	·36356	+ ·00183	+ ·20890
55 G	794	Betūl ...	21 54 50	77 53 40	·41786	·36634	+ ·00547	+ ·20091	·42322	·36675	+ ·00048	+ ·21122
	795 (*a*)	Palsia ...	21 45 20	77 31 0	·40637	·35700	+ ·00700	+ ·19400	·41165	·35748	+ ·00220	+ ·20411
	796	Rangubali ...	21 42 40	77 8 20	·41472	·36589	+ ·00476	+ ·19516	·41996	·36623	− ·00004	+ ·20553
	800	Bumunwadda ...	21 19 20	77 44 20	·41909	·36834	+ ·00339	+ ·19989	·42469	·36894	− ·00163	+ ·21033
	799	Anjangaon ...	21 10 40	77 18 30	·41636	·37038	+ ·00300	+ ·19018	·42171	·37096	− ·00199	+ ·20055
55 H	LXIV	AMRAOTI ...	20 55 30	77 45 50	·41035	·36410	+ ·00215	+ ·18922	·41570	·36479	− ·00282	+ ·19932
	780	Yavlkhed ...	20 42 50	77 4 30	·41276	·36945	+ ·00250	+ ·18404	·41808	·37013	− ·00247	+ ·19440
	753	Karanja ..	20 28 30	77 20 20	·40840	·36057	+ ·00330	+ ·19173	·41408	·36146	+ ·00039	+ ·20200
	752	Bāsim ...	20 6 53	77 8 20	·40777	·36453	+ ·01167	+ ·18238	·41318	·36550	+ ·00672	+ ·19256
	1164	Chikni ..	20 5 0	77 53 30	·40914	·37008	+ ·00512	+ ·17437	·41430	·37108	− ·00010	+ ·18421
55 I	568	Saugor ...	23 50 50	78 44 20	·42979	·36087	+ ·01050	+ ·23321	·43517	·36062	+ ·00553	+ ·24350
	642	Gourjhanar ...	23 31 30	78 56 0	·42823	·36273	+ ·00576	+ ·22756	·43363	·36263	+ ·00071	+ ·23778
	641	Silvānī ...	23 18 20	78 26 20	·42834	·36664	+ ·00715	+ ·22137	·43368	·36656	+ ·00215	+ ·23174
55 J	562	Mohpāni ...	22 44 42	78 50 20	·42380	·36489	+ ·00646	+ ·21546	·42916	·36509	+ ·00138	+ ·22557
	561	Sohāgpur ...	22 41 30	78 11 20	·41735	·36231	+ ·00688	+ ·20703	·42258	·36251	+ ·00195	+ ·21715
	932	Jamundonga ...	22 23 0	78 31 30	·42208	·36575	+ ·00569	+ ·21059	·42745	·36604	+ ·00060	+ ·22075
	773	Chhindwāra ..	22 3 40	78 57 30	·41612	·36620	+ ·00593	+ ·19751	·42115	·36666	+ ·00071	+ ·20720
55 K	793	Doonawa ...	21 52 0	78 29 30	·42044	·36778	+ ·00331	+ ·20370	·42585	·36826	− ·00182	+ ·21385
	801	Lonee ...	21 23 0	78 12 10	·41754	·36888	+ ·00500	+ ·19556	·42284	·36950	− ·00014	+ ·20559
	802	Kātol ...	21 16 0	78 35 50	·41558	·36856	+ ·00657	+ ·19188	·42080	·36931	+ ·00138	+ ·20172
55 L	778	Dhāmangaon ...	20 46 54	78 8 40	·40986	·36712	+ ·00452	+ ·18218	·41502	·36795	− ·00066	+ ·19198
	776	Paunār ..	20 46 50	78 42 40	·41148	·36879	+ ·00226	+ ·18249	·41659	·36964	− ·00306	+ ·19211
55 M	566	Salaia ...	23 51 10	79 58 20	·43123	·36171	+ ·00790	+ ·23467	43660	·36158	+ ·00263	+ ·24468
	567	Damoh ...	23 50 0	79 26 0	·42865	·35967	+ ·00747	+ ·23307	·43408	·35954	+ ·00234	+ ·24319
	564	Mīrganj ...	23 9 40	79 46 50	·42159	·35770	+ ·00685	+ ·22302	·42688	·35779	+ ·00169	+ ·23284
	XVII	JUBBULPORE ...	23 9 26	79 57 9	·42615	·36467	+ ·00649	+ ·22039	·43134	·36480	+ ·00117	+ ·23017
55 N	563	Narsinghpur ...	22 56 40	79 12 30	·42419	·36326	+ ·00805	+ ·21889	·42949	·36342	+ ·00288	+ ·22887
	791	Lakhnadon ...	22 36 10	79 36 30	·42324	·36678	+ ·00541	+ ·21112	·42841	·36707	+ ·00012	+ ·22089

Note :– Y is + or – according as Declination is East or West. Z is + or – according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0				1920·0			
					Total Force F cgs	Components North X cgs	E. or W. Y cgs	Vertical Z cgs	Total Force F cgs	Components North X cgs	E. or W. Y cgs	Vertical Z cgs
			° ′ ″	° ′ ″								
55 N	933	Jangawani ...	22 23 30	79 9 20	·42534	·36902	+ ·00701	+ ·21141	·43067	·36939	+ ·00175	+ ·22141
	772	Seonī	22 4 10	79 32 50	·42164	·36779	+ ·00530	+ ·20611	·42690	·36828	− ·00007	+ ·21590
55 O	792	Deolapar ...	21 35 10	79 22 20	·41989	·36996	+ ·00500	+ ·19852	·42513	·37063	− ·00040	+ ·20826
	774	Koka ...	21 15 30	79 43 0	·41755	·37017	+ ·00473	+ ·19313	·42274	·37099	− ·00074	+ ·20267
	775	Kamptee ...	21 12 30	79 12 40	·41559	·36815	+ ·00512	+ ·19278	·42086	·36897	− ·00026	+ ·20245
55 P	803	Umrer ...	20 51 0	79 20 0	·41666	·36976	+ ·00731	+ ·19192	·42196	·37072	+ ·00192	+ ·20150
	804	Dokai-Surandi ...	20 46 0	79 48 0	·41617	·37183	+ ·00542	+ ·18684	·42137	·37288	− ·00008	+ ·19624
	1040	Chimur ...	20 29 0	79 22 10	·41284	·37112	+ ·00399	+ ·18079	·41800	·37221	− ·00149	+ ·19023
	777	Warorā ...	20 14 20	79 0 20	·41004	·37009	+ ·00391	+ ·17651	·41514	·37118	− ·00150	+ ·18591
56 A	1311	Sarsooty ...	19 59 50	76 29 50	·40434	·36546	+ ·00271	+ ·17299	·40953	·36625	− ·00209	+ ·18324
	1310	Rahir ...	19 59 40	76 17 20	·40268	·36459	+ ·00336	+ ·17092	·40784	·36539	− ·00142	+ ·18117
	1312	Kowotah ...	19 49 50	76 50 10	·40640	·36851	+ ·00255	+ ·17132	·41159	·36941	− ·00241	+ ·18147
	374	Satona ...	19 29 30	76 21 30	·40694	·37101	+ ·00386	+ ·16715	·41207	·37192	− ·00106	+ ·17740
	XLVII	PARBHANI ...	19 15 20	76 46 50	·40491	·36890	+ ·00233	+ ·16692	·41016	·36996	− ·00277	+ ·17705
56 B	654	Mominābād ...	18 44 0	76 23 30	·40299	·37197	+ ·00250	+ ·15502	·40799	·37308	− ·00251	+ ·16511
	1326	Tadwale ...	18 22 40	76 3 10	·40101	·36565	− ·00673	+ ·16449	·40638	·36668	− ·01168	+ ·17479
	653	Ter ...	18 19 40	76 9 10	·40201	·37426	− ·00032	+ ·14677	·40692	·37544	− ·00542	+ ·15685
56 C	659	Dallium ...	17 51 50	76 28 40	·39562	·37044	− ·00194	+ ·13887	·40041	·37176	− ·00718	+ ·14857
	1307	Telmood ...	17 49 20	76 45 20	·40097	·37719	− ·00202	+ ·13600	·40573	·37862	− ·00742	+ ·14566
	XXXIV	HOTGI ...	17 33 40	76 0 20	·39943	·37460	+ ·00193	+ ·13861	·40432	·37602	− ·00324	+ ·14854
	1306 (*a*)	Aland ...	17 32 50	76 34 40	·40893	·38298	+ ·00845	+ ·14310	·41389	·38457	+ ·00300	+ ·15300
	176	Ghāngāpur ...	17 20 20	76 36 0	·39734	·37480	+ ·00089	+ ·13194	·40204	·37631	− ·00447	+ ·14143
	1305	Gulbarga ...	17 18 50	76 49 10	·39904	·37566	− ·00062	+ ·13458	·40389	·37727	− ·00600	+ ·14411
	177	Wādi Junction ...	17 3 0	77 0 0	·39711	·37580	+ ·00092	+ ·12834	·40184	·37748	− ·00458	+ ·13770
56 D	662	Gebbasaligi ...	16 58 50	76 21 0	·39625	·37567	+ ·00073	+ ·12603	·40086	·37725	− ·00458	+ ·13551
	663	Shorāpur ...	16 31 0	76 45 40	·39727	·37807	+ ·00027	+ ·12204	·40193	·37985	− ·00526	+ ·13130
	664	Mudgal ...	16 1 10	76 27 10	·39220	·37628	+ ·00009	+ ·11063	·39671	·37816	− ·00542	+ ·11975
56 E	751	Hingoli ...	19 43 30	77 9 0	·40549	·36627	+ ·00555	+ ·17390	·41082	·36732	+ ·00051	+ ·18398
	750	Umarkhed ...	19 36 9	77 41 20	·41062	·37323	+ ·00243	+ ·17117	·41587	·37435	− ·00284	+ ·18112
	376	Nānder ...	19 9 30	77 18 10	·40588	·37050	+ ·00067	+ ·16574	·41108	·37165	− ·00451	+ ·17503
56 F	377	Dharmabad ...	18 53 10	77 51 30	·40557	·37317	+ ·00127	+ ·15884	·41056	·37442	− ·00413	+ ·16838
	1309	Kandahar ...	18 51 40	77 11 30	·40205	·36999	+ ·00151	+ ·15732	·40703	·37114	− ·00366	+ ·16709
	655	Udgīr ...	18 23 30	77 7 0	·40472	·37510	+ ·00460	+ ·15193	·40973	·37646	− ·00074	+ ·16174
	656	Aurād ...	18 15 0	77 24 30	·40259	·37390	− ·00315	+ ·14921	·40758	·37526	− ·00858	+ ·15883
	1308	Bhālki ...	18 2 10	77 11 40	·40070	·37479	+ ·00190	+ ·14174	·40551	·37623	− ·00346	+ ·15124
56 G	657	Bīdar ...	17 55 0	77 31 0	·40327	·37659	+ ·00182	+ ·14422	·40824	·37818	− ·00363	+ ·15372
	658	Rajasoor ...	17 48 30	77 2 30	·40207	·37572	+ ·00150	+ ·14316	·40699	·37719	− ·00387	+ ·15280
	714	Tāndūr ...	17 15 10	77 34 40	·40005	·37788	+ ·00714	+ ·13131	·40478	·37960	− ·00488	+ ·14043
56 H	178	Yādgīr ...	16 44 40	77 8 10	·39566	·37596	+ ·00042	+ ·12329	·40030	·37774	− ·00515	+ ·13240
	732	Kothakotta ...	16 23 27	77 56 0	·39649	·37753	− ·00103	+ ·12114	·40129	·37961	− ·00677	+ ·12994
	179	Raichūr ...	16 12 0	77 20 30	·39621	·37867	− ·00050	+ ·11658	·40087	·38064	− ·00618	+ ·12555
56 I	747	Danura ...	19 46 50	78 45 10	·41255	·37210	+ ·00405	+ ·17811	41785	·37331	− ·00139	+ 18770
	748	Kupti ...	19 21 13	78 25 10	·40437	·37205	+ ·00165	+ ·15841	·40921	·37326	− ·00380	+ ·16768
	749	Dhānura ...	19 19 10	78 8 30	·41190	·37601	+ ·00665	+ ·16802	·41705	·37730	+ ·00123	+ ·17769
56 J	741	Bālkonda ...	18 51 31	78 19 40	·40685	·37479	+ ·00328	+ ·15826	·41186	·37619	− ·00220	+ ·16764
	742	Jagtial ...	18 47 30	78 54 40	·41284	·37764	− ·00527	+ ·16673	·41808	·37903	− ·01102	+ ·17609
	378	Upalwai ...	18 25 10	78 19 20	·40404	·37441	+ ·00232	+ ·15183	·40903	·37595	− ·00328	+ ·16108
56 K	379	Masaipet ...	17 52 40	78 27 30	·40163	·37561	− ·00047	+ ·14221	·40655	·37733	− ·00617	+ ·15122
	716	Kistnapur ...	17 47 57	78 44 11	·40488	·37931	+ ·00043	+ ·14163	·40982	·38109	− ·00532	+ ·15064
	XV	SECUNDERĀBĀD ...	17 27 44	78 29 37	·40506	·37935	+ ·00169	+ ·14201	·41012	·38126	− ·00407	+ ·15107
	715	Gollagūdā ...	17 25 0	78 1 50	·39979	·37598	+ ·00237	+ ·13587	·40465	·37779	− ·00325	+ ·14494
	734	Shumshabad ...	17 15 33	78 23 50	·39903	·37562	− ·00182	+ ·13467	·40397	·37753	− ·00753	+ ·14355
	735	Nārāyanpur ...	17 9 43	78 52 40	·39883	·37658	− ·00211	+ ·13133	·40373	·37860	− ·00791	+ ·14000
56 L	733	Rajumpett ...	16 51 39	78 9 40	·39887	·37762	+ ·00035	+ ·12845	·40371	·37961	− ·00538	+ ·13728
	736	Devarkonda ...	16 41 11	78 55 10	·39870	·37906	− ·00022	+ ·12358	·40356	·38126	− ·00617	+ ·13214
56 M	LXII	CHANDA ...	19 57 50	79 17 40	·41247	·37359	+ ·00355	+ ·17477	·41760	·37482	− ·00198	+ ·18411
	1057	Ghot ...	19 49 0	79 59 20	·41208	·37397	+ ·00300	+ ·17305	·41721	·37531	− ·00272	+ ·18219
	745	Sirpur Tāndūr ...	19 28 30	79 35 0	·41202	·37394	+ ·00239	+ ·17299	·41730	·37538	− ·00326	+ ·18226
	744	Sokra ...	19 27 40	79 4 10	·40945	·37347	− ·00228	+ ·16780	·41453	·37474	− ·00783	+ ·17704
	1056	Ahiri ...	19 24 40	79 59 50	·41068	·37496	+ ·00339	+ ·16746	·41586	·37653	− ·00234	+ ·17653
	743	Tāndūr ...	19 9 0	79 26 40	·40858	·37456	+ ·00097	+ ·16324	·41367	·37604	− ·00470	+ ·17233
56 N	719	Asanada ...	18 45 32	79 44 30	·40792	·37640	+ ·00188	+ ·15724	·41304	·37811	− ·00388	+ ·16618
	718	Pedapali ...	18 36 30	79 22 30	·40773	·37787	+ ·00887	+ ·15291	·41270	·37962	+ ·00311	+ ·16185
	720	Kottapalle ...	18 22 2	79 47 10	·40427	·37662	+ ·00193	+ ·14694	·40928	·37849	− ·00391	+ ·15569
	717	Thaviogpully ...	18 16 41	79 6 30	·40024	·37213	+ ·00349	+ ·14730	·40522	·37391	− ·00221	+ ·15616

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
56 O	381	Warangal ...	17 58 40	79 36 50	·40759	·37566	+ ·00121	+ ·15813	·41289	·37756	− ·00461	+ ·16705
	380 (a)	Alir ...	17 38 30	79 2 50	·40206	·37733	+ ·00122	+ ·13884	·40695	·37924	− ·00457	+ ·14754
	740	Teepurtee ...	17 0 37	79 24 50	·40015	·37881	− ·00060	+ ·12892	·40501	·38096	− ·00654	+ ·13735
56 P	739	Dachepalle ...	16 36 0	79 43 40	·39872	·37935	− ·00070	+ ·12277	·40369	·38177	− ·00672	+ ·13105
	737	Yelesvaram Ferry ...	16 28 29	79 13 40	·39784	·37886	− ·00136	+ ·12143	·40278	·38121	− ·00737	+ ·12987
	738	Komoravale ...	16 6 10	79 20 0	·40377	·38492	− ·00437	+ ·12183	·40879	·38734	− ·01050	+ ·13026
57 A	934	Hospet ...	15 16 45	76 23 0	·39299	·37992	− ·00213	+ ·10048	·39737	·38193	− ·00778	+ ·10942
	355	Bellary ...	15 8 50	76 55 30	·38966	·37704	− ·00290	+ ·09834	·39415	·37925	− ·00863	+ ·10700
57 B	674	Nundybayur ...	14 54 10	76 3 20	·38426	·37231	− ·01398	+ ·09407	·38855	·37419	− ·01951	+ ·10286
	401	Hangal ...	14 44 10	76 41 50	·38931	·37843	− ·00228	+ ·09139	·39370	·38069	− ·00803	+ ·10004
	402	Challakere ...	14 19 0	76 39 0	·38950	·37980	− ·00224	+ ·08639	·39388	·38217	− ·00808	+ ·09495
	209	Sāsālu ...	14 12 40	76 6 40	·38753	·37801	− ·00305	+ ·08536	·39182	·38027	− ·00880	+ ·09405
57 C	403	Hiriyūr ...	13 56 30	76 36 40	·38737	·37904	− ·00266	+ ·07988	·39164	·38146	− ·00849	+ ·08828
	205	Tiptūr ...	13 15 10	76 28 30	·38594	·37933	− ·00403	+ ·07103	·39012	·38184	− ·01000	+ ·07933
57 D	449	Yediyur ...	12 58 40	76 51 20	·38530	·37977	− ·00394	+ ·06499	·38943	·38238	− ·00999	+ ·07304
	448	Dandiganhalli ...	12 58 20	76 16 50	·38379	·37836	− ·00367	+ ·06415	·38786	·38093	− ·00962	+ ·07234
	203	Seringapatam ...	12 25 30	76 42 40	·38361	·37918	− ·00461	+ ·05793	·38764	·38184	− ·01078	+ ·06595
	201	Hunsūr ...	12 18 20	76 16 50	·38273	·37869	− ·00713	+ ·05494	·38671	·38131	− ·01324	+ ·06304
	202	Nanjangūd ...	12 7 40	76 40 40	·38525	·38143	− ·00567	+ ·05386	·38925	·38411	− ·01188	+ ·06188
57 E	180	Adoni ...	15 37 0	77 16 30	·39399	·37906	− ·00131	+ ·10741	·39855	·38119	− ·00708	+ ·11615
	713	Kurnool Road ...	15 23 20	77 52 10	·39457	·38037	− ·00121	+ ·10488	·39926	·38278	− ·00712	+ ·11334
	XXXV	GUNTAKAL ...	15 10 48	77 22 57	·39294	·37910	− ·00181	+ ·10337	·39760	·38143	− ·00770	+ ·11197
57 F	354	Gārladinne ...	14 50 0	77 35 20	·39227	·38151	− ·00141	+ ·09125	·39674	·38396	− ·00734	+ ·09959
	400	Kalyandrug ...	14 32 50	77 6 40	·38759	·37649	− ·00402	+ ·09204	·39210	·37889	− ·00989	+ ·10045
	351	Dharmavaram ...	14 25 20	77 42 40	·39061	·37984	− ·00355	+ ·09098	·39521	·38243	− ·00954	+ ·09927
	399	Povugada ...	14 6 20	77 17 10	·38907	·37989	− ·00181	+ ·08401	·39354	·38249	− ·00779	+ ·09226
57 G	352	Malngur ...	13 54 0	77 32 50	·38633	·37751	− ·00147	+ ·08212	·39085	·38022	− ·00753	+ ·09019
	353	Thondebhavi ...	13 30 10	77 31 0	·39006	·38270	− ·00451	+ ·07530	·39448	·38542	− ·01068	+ ·08336
	205	Tumkūr ...	13 20 0	77 6 0	·38463	·37799	− ·00079	+ ·07114	·38887	·38066	− ·00679	+ ·07918
57 H	VII	BANGALORE ...	12 58 43	77 35 26	·38854	·38267	− ·00452	+ ·06714	·39288	·38550	− ·01076	+ ·07504
	204	Channapatna ...	12 39 40	77 12 0	·38695	·38180	− ·00448	+ ·06273	·39115	·38457	− ·01069	+ ·07062
	450	Singanallur ...	12 8 30	77 13 0	·38663	·38256	− ·00400	+ ·05586	·39079	·38544	− ·01028	+ ·06362
57 I	731	Kurnool City ...	15 49 50	78 2 20	·39486	·37878	− ·00112	+ ·11153	·39959	·38107	− ·00701	+ ·12005
	712	Nandyāl ...	15 28 20	78 28 0	·39561	·38053	− ·00217	+ ·10818	·40044	·38303	− ·00822	+ ·11653
	711	Diguvametta ...	15 23 30	78 49 20	·39480	·38034	− ·00205	+ ·10587	·39967	·38295	− ·00810	+ ·11408
57 J	730	Chāgalamarri ...	14 56 41	78 35 20	·39419	·38222	− ·00251	+ ·09639	·39895	·38493	− ·00860	+ ·10450
	182	Kondāpuram ...	14 46 20	78 11 40	·39384	·38233	− ·00363	+ ·09441	·39852	·38496	− ·00972	+ ·10261
	183	Cuddapah ...	14 27 10	78 49 20	·39170	·38152	− ·00213	+ ·08866	·39642	·38441	− ·00833	+ ·09647
	350	Kadiri ...	14 6 50	78 9 0	·39077	·38140	− ·00349	+ ·08498	·39537	·38415	− ·00963	+ ·09298
57 K	349	Tammanamgutta ...	13 42 50	78 21 30	·39132	·38307	− ·00368	+ ·07980	·39594	·38598	− ·00992	+ ·08765
	348	Kalikiri ...	13 28 40	78 47 40	·39060	·38314	− ·00431	+ ·07580	·39520	·38615	− ·01063	+ ·08341
	398	Madanapalle ...	13 34 40	78 30 30	·38816	·38093	− ·00396	+ ·07452	·39269	·38388	− ·01023	+ ·08214
	675	Tadgole ...	13 24 50	78 13 0	·38786	·38107	− ·00473	+ ·07206	·39236	·38401	− ·01095	+ ·07977
	397	Palmaner ...	13 12 40	78 44 50	·38698	·38086	− ·00517	+ ·06841	·39155	·38395	− ·01153	+ ·07584
57 L	190	Bowringpet ...	12 58 50	78 11 0	·38661	·38085	− ·00468	+ ·06634	·39104	·38383	− ·01096	+ ·07391
	1335	Mysore Mines on Surface	12 55 30	78 15 40	·38668	·38114	− ·00497	+ ·06505	·39115	·38418	− ·01126	+ ·07256
	„	„ „ Underground	12 55 30	78 15 40	·38704	·38133	− ·01227	+ ·06517	·39150	·38425	− ·01862	+ ·07268
	189	Jalārpet ...	12 34 0	78 34 10	·38496	·37987	− ·00688	+ ·06206	·38945	·38299	− ·01336	+ ·06933
	191	Morappūr ...	12 7 30	78 21 40	·38797	·38434	− ·00632	+ ·05262	·39233	·38752	− ·01287	+ ·05984
57 M	709	Gundlakamma ...	15 59 10	79 38 20	·39844	·38176	− ·00167	+ ·11409	·40342	·38437	− ·00781	+ ·12225
	726	Podili ...	15 37 5	79 36 20	·39621	·38151	− ·00205	+ ·10689	·40106	·38418	− ·00819	+ ·11481
	LXI	CUMBUM ...	15 35 50	79 6 40	·39632	·38079	− ·00395	+ ·10978	·40123	·38335	− ·01070	+ ·11793
	727	Pāmūru ...	15 5 20	79 24 40	·39465	·38162	− ·00238	+ ·10056	·39950	·38440	− ·00859	+ ·10848
57 N	387	Bitragunta ...	14 48 40	79 57 20	·39324	·38115	− ·00640	+ ·09654	·39814	·38408	− ·01271	+ ·10411
	729	Badvel ...	14 43 57	79 3 50	·39310	·38169	− ·00234	+ ·09398	·39787	·38451	− ·00849	+ ·10187
	728	Nandabaram ...	14 40 33	79 28 50	·39317	·38218	− ·00210	+ ·09225	·39797	·38513	− ·00833	+ ·09995
	346	Gūdūr ...	14 8 40	79 51 10	·39279	·38357	− ·00256	+ ·08454	·39757	·38672	− ·00900	+ ·09179
	184	Reddipalle ...	14 5 30	79 14 0	·39052	·38157	− ·00360	+ ·08306	·39528	·38464	− ·00995	+ ·09058
57 O	185	Rēnigunta ...	13 38 20	79 30 50	·38840	·38103	− ·00339	+ ·07520	·39308	·38423	− ·00980	+ ·08235
	347	Pākala ...	13 27 0	79 7 20	·38832	·38216	− ·00351	+ ·06880	·39291	·38535	− ·00988	+ ·07607
	XXXVI	ARKONAM ...	13 4 30	79 40 20	·39066	·38444	− ·00490	+ ·06925	·39530	·38771	− ·01145	+ ·07625
57 P	188	Katpadi ...	12 58 40	79 7 40	·38985	·38405	− ·00475	+ ·06683	·39444	·38727	− ·01122	+ ·07405
	345	Chingleput ...	12 41 20	79 58 30	·38721	·38286	− ·00567	+ ·05758	·39176	·38621	− ·01227	+ ·06415
	344	Polūr ...	12 30 50	79 7 50	·38461	·38094	− ·00259	+ ·05292	·38902	·38429	− ·00926	+ ·05978
	389	Acharapakkam ...	12 24 10	79 49 10	·38182	·37864	− ·00856	+ ·04842	·38615	·38194	− ·01517	+ ·05481
	343	Tandarai ...	12 6 40	79 9 0	·38553	·38200	− ·00561	+ ·05173	·38997	·38535	− ·01219	+ ·05861

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
58 A	453	Gundalpet ...	11 48 20	76 41 20	·38412	·38114	−·00527	+·04753	·38803	·38388	−·01154	+·05534
	454	Sultan's Battery ...	11 39 40	76 15 30	·38401	·38122	−·00560	+·04586	·38784	·38390	−·01181	+·05383
	455	Ootacamund ...	11 24 30	76 42 50	·38259	·38032	−·00537	+·04126	·38641	·38312	−·01168	+·04893
	195	Coonoor ...	11 20 40	76 47 50	·38177	·37947	−·00548	+·04143	·38560	·38228	−·01185	+·04909
	456	Nilambūr ...	11 16 20	76 13 20	·37995	·37790	−·00549	+·03898	·38364	·38060	−·01169	+·04675
58 B	197	Pattāmbi ...	10 48 10	76 10 40	·37682	·37493	−·00552	+·03723	·38051	·37767	−·01175	+·04493
	196	Olavakkōt ...	10 48 10	76 38 20	·37904	·37748	−·00709	+·03361	·38270	·38024	−·01344	+·04113
	457	Anamalai ...	10 34 50	76 56 0	·38142	·38015	−·00754	+·03008	·38508	·38300	−·01407	+·03743
	475	Irinjālakuda ...	10 20 20	76 13 0	·37959	·37831	−·00822	+·03001	·38318	·38105	−·01465	+·03758
	474	Kodhamangalam ...	10 3 40	76 37 40	·37741	·37676	−·00846	+·02026	·38084	·37954	−·01506	+·02750
58 C	473	Cochin ...	9 57 50	76 14 0	·38115	·38045	−·00592	+·02246	·38454	·38317	−·01249	+·02998
	464	Kanjirapalli ...	9 33 0	76 46 50	·37818	·37787	−·00904	+·01244	·38150	·38068	−·01578	+·01946
	465	Alleppey ...	9 29 50	76 19 10	·37463	·37447	−·00873	+·00622	·37780	·37725	−·01534	+·01336
	467	Punalūr ...	9 1 20	76 55 30	·37992	·37974	−·00889	+·00757	·38320	·38260	−·01579	+·01439
58 D	466	Quilon ...	8 53 30	76 36 0	·37791	·37791	−·00098	+·00023	·38100	·38086	−·00771	+·00702
	472	Trivandrum ...	8 28 50	76 55 30	·37968	·37960	−·00759	−·00034	·38282	·38249	−·01447	+·00624
58 E	451	Kāveripuram ...	11 54 20	77 45 30	·38304	·37904	−·00511	+·05492	·38731	·38208	−·01148	+·06238
	452	Satyamangalam ...	11 30 0	77 14 20	·38590	·38324	−·00481	+·04499	·38987	·38615	−·01130	+·05251
	193	Erode ...	11 19 40	77 43 50	·38350	·38135	−·00598	+·04011	·38751	·38441	−·01253	+·04729
	194	Sōmanūr ...	11 5 10	77 11 0	·37985	·37789	−·00627	+·03806	·38373	·38083	−·01269	+·04540
58 F	458	Dhārāpuram ...	10 43 30	77 31 20	·38482	·38329	−·00774	+·03337	·38863	·38625	−·01439	+·04051
		KODAIKANAL Obsy.	10 13 50	77 27 46	·37519	·37441	−·00517	+·02356	·37885	·37745	−·01185	+·03043
	330	Ammayanayakkanur...	10 10 30	77 54 20	·38266	·38201	−·00696	+·02125	·38640	·38514	−·01383	+·02800
	462	Nyamakod Estate ...	10 8 10	77 3 10	·38112	·38036	−·00700	+·02307	·38471	·38327	−·01371	+·03023
	459	Periyakulam ...	10 7 40	77 33 20	·38388	·38305	−·00999	+·02310	·38753	·38601	−·01683	+·03000
	460	Top Station ...	10 6 40	77 13 20	·38051	·37945	−·00351	+·02822	·38418	·38241	−·01024	+·03530
	461	Munnar ...	10 4 10	77 3 20	·38061	·37985	−·00631	+·02318	·38419	·38277	−·01307	+·03033
58 G	463	Kuruvanath ...	9 38 50	77 12 30	·38086	·38041	−·00906	+·01621	·38435	·38333	−·01585	+·02306
	469	Virudupatti ...	9 35 50	77 57 40	·38399	·38378	−·01044	+·00771	·38750	·38684	−·01737	+·01417
	329	Koilpati ...	9 10 30	77 51 50	...	...	...	...	...	...	...	...
58 H	468	Tenkāsi ...	8 58 0	77 18 30	·38066	·38050	−·00927	+·00638	·38397	·38341	−·01618	+·01295
	XLIV	**TINNEVELLY** ...	8 44 0	77 42 30	·37889	·37874	−·00950	+·00438	·38226	·38176	−·01646	+·01060
	471	Nāgercoil ...	8 11 26	77 26 0	·37906	·37889	−·00945	−·00652	·38220	·38184	−·01640	−·00038
58 I	192	Salem ...	11 40 0	78 6 50	·38418	·38209	−·00600	+·03957	·38822	·38521	−·01257	+·04664
	391	Atūr ...	11 35 40	78 36 50	·38746	·38462	−·00562	+·04647	·39182	·38796	−·01229	+·05345
	392	Perambalūr ...	11 14 10	78 51 50	·38595	·38384	−·00636	+·03973	·39021	·38721	−·01310	+·04642
58 J	336	Pulivur ...	10 56 0	78 10 10	·37989	·37815	−·00839	+·03533	·38395	·38132	−·01504	+·04218
	335	Trichinopoly ...	10 47 30	78 40 40	·38276	·38127	−·00759	+·03286	·38692	·38464	−·01435	+·03944
	331	Manapārai ...	10 36 40	78 25 30	·38335	·38214	−·00767	+·02952	·38746	·38551	−·01445	+·03619
	393	Pudukottai ...	10 22 50	78 48 50	·38092	·37990	−·00601	+·02725	·38501	·38333	−·01281	+·03354
	396	Nattam ...	10 13 40	78 14 0	·37997	·37921	−·00707	+·02278	·38385	·38246	−·01385	+·02931
	395	Tiruppattūr ...	10 7 10	78 36 0	·38202	·38127	−·00911	+·02220	·38603	·38464	−·01601	+·02853
58 K	334	Tiruppuvanam ...	9 49 50	78 15 40	·38074	·38026	−·00847	+·01724	·38451	·38348	−·01540	+·02368
	333	Sattirakkudi ...	9 24 0	78 42 10	·38139	·38115	−·00876	+·01032	·38525	·38458	−·01573	+·01628
58 L	327	Tuticorin ...	8 48 10	78 9 0	·38071	·38060	−·00886	+·00078	·38413	·38374	−·01579	+·00682
	470	Manapadu ...	8 22 20	78 4 0	·38050	·38034	−·00993	−·00422	·38377	·38340	−·01693	+·00165
58 M	341	Villupuram ...	11 56 40	79 29 50	·38067	·37792	−·00090	+·04566	·38501	·38140	−·00743	+·05207
	342	Pondicherry ...	11 56 0	79 49 50	·38794	·38437	−·00638	+·05208	·39236	·38775	−·01308	+·05855
	340	Alapākam ...	11 37 10	79 43 10	·38765	·38492	−·00742	+·04533	·39200	·38833	−·01414	+·05166
	390	Eranji ...	11 35 50	79 10 20	·38016	·37802	−·00521	+·03990	·38442	·38143	−·01179	+·04638
	338	Māyavaram ...	11 5 50	79 38 30	·38590	·38410	−·00502	+·03686	·39011	·38755	−·01182	+·04302
58 N	XLVI	**TANJORE** ...	10 46 40	79 8 20	·38295	·38168	−·00778	+·03019	·38708	·38509	−·01457	+·03643
	339	Tirutturaippūndi ...	10 32 20	79 38 10	·38286	·38183	−·00661	+·02725	·38696	·38531	−·01346	+·03314
	394	Setabava Chattram ...	10 14 50	79 16 50	·38169	·38107	−·00693	+·02073	·38571	·38453	−·01382	+·02673
58 O	XLV	**MANDAPAM** ...	9 16 50	79 8 30	·38172	·38151	−·00825	+·00943	·38559	·38500	−·01523	+·01513
58 P	1377	Mannar ...	8 59 10	79 54 30	·38257	·38245	−·00783	+·00519	·38647	·38605	−·01491	+·01036
	1378	Marichchukaddi ...	8 34 50	79 55 0	·38130	·38119	−·00912	−·00260	·38510	·38475	−·01619	+·00242
	1379	Puttalam ...	8 1 38	79 49 0	·38194	·38166	−·00925	−·01109	·38563	·38523	−·01640	−·00620
59 M	1380	Chilaw ...	7 34 20	79 46 50	·38084	·38026	−·00970	−·01860	·38442	·38380	−·01690	−·01399
	1381	Negombo ...	7 12 30	79 49 20	·38210	·38114	−·00976	−·02531	·38556	·38461	−·01704	−·02086
59 N	1398	Colombo ...	6 54 17	79 52 15	·38033	·37885	−·00876	−·03224	·38365	·38230	−·01599	−·02794
62 C	1277	Nochani ...	29 54 20	80 9 40	·46095	·33647	+·01500	+·31471	·46609	·33387	+·01035	+·32506
	1276	Askot ...	29 45 41	80 19 30	·46077	·33747	+·01492	+·31336	·46592	·33499	+·01021	+·32366

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
62 C	1275	Pithoragarh ...	29 35 0	80 12 30	·45909	·33836	+ ·01395	+ ·30997	·46419	·33587	+ ·00923	+ ·32029
	1274	Lohaghat ...	29 24 20	80 5 30	·45753	·33803	+ ·01395	+ ·30801	·46263	·33558	+ ·00924	+ ·31832
62 D	596	Shāhgarh ...	28 33 30	80 3 10	·45346	·34254	+ ·01286	+ ·29686	·45838	·34035	+ ·00804	+ ·30694
	594	Chandan Choki ...	28 32 22	80 46 40	·45509	·34380	+ ·01299	+ ·29790	·46016	·34180	+ ·00799	+ ·30799
	595	Khutār ...	28 12 0	80 15 40	·45225	·34425	+ ·01211	+ ·29304	·45733	·34228	+ ·00722	+ ·30323
62 H	LII	KATARNIAN GHĀT	28 19 50	81 7 50	·45446	·34496	+ ·01282	+ ·29559	·45945	·34306	+ ·00775	+ ·30552
63 A	593	Lakhimpur ...	27 56 18	80 46 20	·45112	·34572	+ ·01196	+ ·28955	·45617	·34396	+ ·00694	+ ·29956
	592	Kamālpur ...	27 22 30	80 49 40	·44853	·34827	+ ·01127	+ ·28242	·45357	·34672	+ ·00616	+ ·29234
	591	Sanoda ...	27 6 56	80 25 10	·44658	·34879	+ ·01106	+ ·27866	·45163	·34730	+ ·00595	+ ·28864
63 B	582	Araul ...	26 55 0	80 1 40	·44632	·35007	+ ·01049	+ ·27668	·45148	·34862	+ ·00548	+ ·28683
	476	Lucknow ...	26 50 0	80 55 20	·44624	·35072	+ ·01066	+ ·27570	·45134	·34944	+ ·00547	+ ·28560
	LVII	CAWNPORE ...	26 27 0	80 21 0	·44467	·35299	+ ·01121	+ ·27021	·44978	·35177	+ ·00604	+ ·28022
	581	Mālwā ...	26 0 50	80 40 0	·44012	·35313	+ ·00945	+ ·26252	·44526	·35215	+ ·00423	+ ·27244
63 C	578	Atarra ...	25 17 20	80 34 10	·43785	·35622	+ ·00909	+ ·25444	·44312	·35556	+ ·00383	+ ·26442
63 D	646	Ajaigarh ...	24 54 10	80 15 30	·43716	·35900	+ ·00809	+ ·24934	·44252	·35849	+ ·00286	+ ·25943
	579	Sutnā ...	24 34 20	80 50 0	·43546	·35968	+ ·00902	+ ·24530	·44081	·35941	+ ·00360	+ ·25518
	647	Amānganj ...	24 25 40	80 2 30	·43403	·36217	+ ·00848	+ ·24014	·43984	·36178	+ ·00320	+ ·25012
	580	Amdara ...	24 6 10	80 34 40	·43206	·36150	+ ·00720	+ ·23650	·43708	·36116	+ ·00187	+ ·24616
63 E	517	Nānpāra ...	27 51 40	81 31 10	·45285	·34782	+ ·01243	+ ·28971	·45785	·34619	+ ·00726	+ ·29954
	515	Gondā ...	27 8 30	81 58 20	·44853	·34960	+ ·01141	+ ·28076	·45360	·34832	+ ·00606	+ ·29050
63 F	514	Daryābād ...	26 51 30	81 33 0	·44746	·35126	+ ·01062	+ ·27699	·45253	·35003	+ ·00531	+ ·28678
	477	Rāe-Barelī ...	26 14 0	81 14 40	·44395	·35517	+ ·00956	+ ·26617	·44906	·35419	+ ·00419	+ ·27601
	478	Amethī ...	26 9 20	81 48 40	·44256	·35366	+ ·01030	+ ·26585	·44765	·35280	+ ·00490	+ ·27550
63 G	482	Kunwār ...	25 42 0	81 13 10	·43713	·35265	+ ·01030	+ ·25810	·44229	·35191	+ ·00498	+ ·26788
	481	Allahābād ...	25 27 30	81 49 20	·44040	·35848	+ ·00894	+ ·25568	·44545	·35787	+ ·00340	+ ·26522
	XLIX	MĀNIKPUR ...	25 3 10	81 5 20	·43775	·35863	+ ·00884	+ ·25085	·44305	·35819	+ ·00343	+ ·26074
63 H	892	Sohagi ...	24 59 20	81 42 0	·43852	·35974	+ ·00777	+ ·25065	·44373	·35939	+ ·00222	+ ·26027
	891	Mauganj ...	24 40 30	81 50 40	·43592	·35942	+ ·00919	+ ·24650	·44115	·35919	+ ·00365	+ ·25609
	893	Rewah ...	24 33 0	81 17 50	·43572	·36077	+ ·00786	+ ·24421	·44098	·36052	+ ·00236	+ ·25393
	894	Rāmnagar ...	24 11 0	81 8 50	·43369	·36138	+ ·00816	+ ·23963	·43896	·36126	+ ·00265	+ ·24933
	895	Majholi ...	24 6 47	81 37 0	·43752	·36505	+ ·00619	+ ·24110	·44284	·36500	+ ·00056	+ ·25078
63 I	516	Tulsipur ...	27 31 30	82 24 40	·45078	·34878	+ ·01174	+ ·28533	·45582	·34742	+ ·00640	+ ·29501
63 J	519	Basti ...	26 49 10	82 46 30	·44925	·35284	+ ·01037	+ ·27788	·45435	·35184	+ ·00485	+ ·28743
	X	FYZĀBĀD ...	26 48 5	82 8 5	·44831	·35274	+ ·01080	+ ·27648	·45347	·35168	+ ·00540	+ ·28623
	513	Mālipur ...	26 16 10	82 38 50	·44556	·35522	+ ·00989	+ ·26879	·45065	·35443	+ ·00434	+ ·27829
63 K	479	Suriāwān ...	25 28 0	82 25 50	·44128	·35843	+ ·00968	+ ·25721	·44649	·35801	+ ·00403	+ ·26675
	480	Chunār ...	25 6 10	82 52 30	·43977	·35985	+ ·00829	+ ·25265	·44500	·35963	+ ·00256	+ ·26207
	890	Lālganj ...	25 1 20	82 22 10	·43903	·36024	+ ·00880	+ ·25079	·44423	·35996	+ ·00313	+ ·26030
63 L	889	Shāhganj ...	24 42 30	82 56 40	·43730	·36112	+ ·00759	+ ·24650	·44244	·36104	+ ·00177	+ ·25572
	896	Jiawan ...	24 20 20	82 16 20	·44303	·36844	+ ·00798	+ ·24587	·44837	·36843	+ ·00323	+ ·25553
	897	Saipur ...	24 2 30	82 41 30	·43542	·36523	+ ·00770	+ ·23694	·44060	·36538	+ ·00189	+ ·24620
63 M	521	Uskā Bāzār ...	27 11 30	83 6 20	·45137	·35065	+ ·01059	+ ·28401	·45645	·34949	+ ·00510	+ ·29356
63 N	520	Gorakhpur ...	26 45 0	83 23 20	·44963	·35412	+ ·01028	+ ·27689	·45472	·35322	+ ·00463	+ ·28632
	522	Bhatni ...	26 23 0	83 55 40	·44690	·35563	+ ·00975	+ ·27046	·45190	·35494	+ ·00395	+ ·27965
	524	Azamgarh ...	26 1 50	83 11 10	·44401	·35633	+ ·00960	+ ·26473	·44907	·35570	+ ·00392	+ ·27409
63 O	523	Mau ...	25 56 20	83 34 20	·44286	·35489	+ ·01013	+ ·26472	·44794	·35437	+ ·00441	+ ·27396
	996	Zahūrābād ...	25 44 40	83 43 30	·44317	·35686	+ ·00877	+ ·26263	·44829	·35644	+ ·00297	+ ·27186
	995	Ghāzīpur ...	25 33 50	83 33 20	...	...	...	...	...	...	...	...
	512	Buxar ...	25 33 30	83 57 40	·44785	·36214	+ ·02092	+ ·26265	·45300	·36202	+ ·01501	+ ·27189
	525	Aunrihar ...	25 32 10	83 9 50	·44258	·35768	+ ·00945	+ ·26050	·44785	·35731	+ ·00369	+ ·26997
	959	Gahmar ...	25 29 0	83 48 10	·44668	·36004	+ ·00970	+ ·26420	·45201	·35979	+ ·00384	+ ·27360
	484	Karmnasa ...	25 14 30	83 25 20	·44063	·35919	+ ·00868	+ ·25505	·44581	·35898	+ ·00284	+ ·26433
63 P	888	Manchee ...	24 39 40	83 25 50	·43858	·36172	+ ·01081	+ ·24778	·44379	·36176	+ ·00493	+ ·25700
	485	Japla ...	24 32 30	84 0 0	·44282	·36486	+ ·00584	+ ·25085	·44814	·36499	− ·00016	+ ·26001
	887	Doodhee ...	24 12 40	83 14 30	·43683	·36473	+ ·00869	+ ·24024	·44202	·36496	+ ·00282	+ ·24937
	886	Meeral ...	24 11 20	83 42 30	·43844	·36695	+ ·00771	+ ·23982	·44359	·36723	+ ·00174	+ ·24882
64 A	565	Sleemanābād ...	23 36 30	80 16 20	·43316	·36665	+ ·00629	+ ·23056	·43848	·36666	+ ·00089	+ ·24047
	763	Umariā ...	23 31 10	80 49 10	·42893	·36428	+ ·00708	+ ·22636	·43414	·36442	+ ·00164	+ ·23595
	782	Churi ...	23 12 40	80 30 0	·43088	·36344	+ ·00665	+ ·23137	·43640	·36363	+ ·00123	+ ·24127
	783 (a)	Kasai Sonda ...	23 4 50	80 53 50	·42642	·36480	+ ·01029	+ ·22058	·43158	·36509	+ ·00478	+ ·23011
64 B	790	Kakaria ...	22 48 10	80 15 10	·42569	·36710	+ ·00496	+ ·21544	·43085	·36738	− ·00046	+ ·22508

Note :— Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
64 B	789	Thonda ...	22 27 50	80 38 30	·42452	·36731	+ ·00474	+ ·21278	·42076	·36780	− ·00080	+ ·22232
	771	Nainpur ...	22 25 36	80 5 40	·42528	·36826	+ ·00523	+ ·21268	·43049	·36864	− ·00020	+ ·22232
64 C	770	Bālāghāt ...	21 48 40	80 12 10	·42171	·36977	+ ·00470	+ ·20270	·42697	·37048	− ·00082	+ ·21225
	769	Sālekasa ...	21 17 30	80 30 40	·42645	·37797	+ ·00396	+ ·19744	·43172	·37889	− ·00175	+ ·20693
64 D	805	Palasgarh ...	20 39 0	80 17 10	·41541	·37154	+ ·00395	+ ·18575	·42063	·37268	− ·00167	+ ·19503
	806	Kosemi ...	20 23 40	80 34 10	·41448	·37293	+ ·00440	+ ·18082	·41962	·37419	− ·00130	+ ·18991
	807	Damkassa ...	20 20 30	80 56 10	·41476	·37394	+ ·00301	+ ·17941	·41991	·37528	− ·00277	+ ·18838
	1041	Garhchiroli ...	20 11 0	80 0 40	·41393	·37380	+ ·00449	+ ·17776	·41906	·37506	− ·00116	+ ·18694
64 E	899	Bharatpur ...	23 44 5	81 46 10	·43177	·36376	+ ·00695	+ ·23251	·43697	·36389	+ ·00134	+ ·24191
	762	Sahdol ...	23 17 0	81 21 50	·43046	·36713	+ ·00621	+ ·22466	·43562	·36736	+ ·00054	+ ·23414
64 F	784	Dindori ...	22 57 0	81 4 10	·42308	·36673	+ ·00766	+ ·21082	·42800	·36709	+ ·00212	+ ·22005
	761	Khairi ...	22 55 20	81 52 50	·42650	·36665	+ ·00621	+ ·21780	·43161	·36710	+ ·00049	+ ·22700
	785	Mādhopur ...	22 45 40	81 25 20	·42257	·36379	+ ·00559	+ ·21493	·42766	·36423	− ·00002	+ ·22412
	788	Rajadhar ...	22 14 0	81 2 40	·42277	·36795	+ ·00638	+ ·20808	·42799	·36863	+ ·00076	+ ·21746
	787	Kamardhā ...	22 0 20	81 13 40	·42229	·36843	+ ·00663	+ ·20625	·42750	·36922	+ ·00101	+ ·21550
64 G	764	Bhātāpāra ...	21 44 0	81 56 30	·42122	·36981	+ ·00438	+ ·20161	·42641	·37079	− ·00139	+ ·21058
	786	Bemetara ...	21 43 0	81 31 40	·42244	·37053	+ ·00506	+ ·20285	·42769	·37146	− ·00067	+ ·21198
	LXIII	RAIPUR ...	21 15 50	81 38 20	·42030	·37127	+ ·00467	+ ·19695	·42560	·37242	− ·00108	+ ·20600
	768	Rāj-Nāndgaon ...	21 6 10	81 2 20	·41929	·37260	+ ·00515	+ ·19221	·42442	·37364	− ·00054	+ ·20134
64 H	766	Rājim ...	20 58 30	81 52 10	·41933	·37251	+ ·00440	+ ·19250	·42455	·37377	− ·00148	+ ·20136
	767	Dhamtari ...	20 42 40	81 32 40	·41670	·36268	+ ·00405	+ ·18634	·42187	·37400	− ·00171	+ ·19519
	942	Sihoa ...	20 18 40	81 54 40	·41551	·37314	+ ·00488	+ ·18273	·42079	·37473	− ·00100	+ ·19143
	808	Kānker ...	20 16 10	81 29 50	·41639	·37536	+ ·00305	+ ·18021	·42158	·37681	− ·00283	+ ·18904
64 I	898	Goini ...	23 48 0	82 19 20	·43431	·36732	+ ·00798	+ ·23160	·43949	·36758	+ ·00219	+ ·24091
	900	Ninguani ...	23 18 50	82 0 30	·42836	·36520	+ ·00721	+ ·22376	·43352	·36556	+ ·00152	+ ·23302
	901	Baikunthpur ...	23 16 20	82 33 0	·42970	·36696	+ ·00643	+ ·22348	·43484	·36742	+ ·00064	+ ·23257
64 J	902	Matin ...	22 43 50	82 25 0	·42906	·36866	+ ·00659	+ ·21940	·43434	·36934	+ ·00077	+ ·22855
	760	Belghana ...	22 25 50	82 2 20	·42286	·36910	+ ·00426	+ ·20631	·42791	·36980	− ·00150	+ ·21529
	903	Korba ...	22 20 30	82 42 30	·42715	·37029	+ ·00524	+ ·21287	·43235	·37111	− ·00060	+ ·22184
	759	Akaltara ...	22 2 10	82 25 40	·42428	·37075	+ ·00573	+ ·20622	·42948	·37169	− ·00012	+ ·21518
64 K	1038	Pithora ...	21 15 20	82 31 10	·41931	·37124	+ ·00461	+ ·19488	·42456	·37256	− ·00131	+ ·20359
	1039	Tumgaon ...	21 11 40	82 7 20	·42039	·37234	+ ·00424	+ ·19512	·42570	·37360	− ·00164	+ ·20405
64 L	1036	Nawapara ...	20 48 40	82 31 50	·41860	·37276	+ ·00338	+ ·19043	·42385	·37422	− ·00257	+ ·19899
	1035	Khariar ...	20 17 44	82 46 0	·41748	·37605	+ ·00172	+ ·18132	·42271	·37775	− ·00436	+ ·18964
64 M	907	Champa ...	23 13 0	83 45 10	·43027	·36738	+ ·00704	+ ·22388	·43542	·36807	+ ·00107	+ ·23164
	909	Bisrāmpur ...	23 6 30	83 12 10	·42756	·36624	+ ·00675	+ ·22130	·43306	·36686	+ ·00086	+ ·23012
64 N	908	Kalnai ...	22 46 30	83 30 20	·43011	·37019	+ ·00635	+ ·21891	·43532	·37103	+ ·00033	+ ·22769
	904	Dharmjaygarh ...	22 28 10	83 13 20	·42697	·36956	+ ·00573	+ ·21377	·43223	·37051	− ·00022	+ ·22258
	905	Sikirma ...	22 26 40	83 56 20	·42495	·36815	+ ·00568	+ ·21218	·43014	·36921	− ·00031	+ ·22069
64 O	758	Kharsia ...	21 59 40	83 6 20	·42416	·37046	+ ·00547	+ ·20650	·42931	·37151	− ·00043	+ ·21514
	757	Kanika ...	21 52 30	83 44 20	·42572	·37246	+ ·00548	+ ·20609	·43097	·37373	− ·00058	+ ·21463
	XI	SAMBALPUR ...	21 27 52	83 58 35	·42245	·37313	+ ·00481	+ ·19804	·42777	·37467	− ·00133	+ ·20642
	1037	Saraipali ...	21 18 20	83 0 30	·42230	·37273	+ ·00596	+ ·19842	·42759	·37413	+ ·00002	+ ·20703
	1033	Chakerkend ...	21 18 10	83 30 30	·42165	·37244	+ ·00436	+ ·19763	·42697	·37392	− ·00171	+ ·20612
64 P	938	Sonpur ...	20 50 40	83 54 30	·42118	·37645	+ ·00387	+ ·18885	·42645	·37819	− ·00233	+ ·19703
	1034	Patnā ...	20 42 20	83 8 20	·42004	·37623	+ ·00417	+ ·18672	·42527	·37786	− ·00190	+ ·19510
65 A	1042	Jaroundee ...	19 59 40	80 26 20	·41335	·37405	+ ·00350	+ ·17588	·41856	·37547	− ·00222	+ ·18496
	1044	Koilibeda ...	19 57 40	80 59 0	·41304	·37485	+ ·00328	+ ·17340	·41816	·37637	− ·00252	+ ·18219
	1043	Parlakot ...	19 47 0	80 41 10	·41289	·37525	+ ·00286	+ ·17220	·41810	·37681	− ·00295	+ ·18115
	1055	Kumargura ...	19 26 30	80 32 30	·41215	·37709	+ ·00325	+ ·16630	·41726	·37871	− ·00259	+ ·17517
65 B	1054	Matimurka ...	18 59 30	80 16 50	·40792	·37497	+ ·00290	+ ·16060	·41307	·37670	− ·00290	+ ·16946
	1050	Vijapur ...	18 47 20	80 49 0	·41012	·37912	+ ·00183	+ ·15638	·41525	·38104	− ·00417	+ ·16501
	1053	Madder ...	18 46 20	80 33 10	·40683	·37377	+ ·00314	+ ·16059	·41203	·37561	− ·00271	+ ·16934
	721	Lankalagada ...	18 40 58	80 7 10	·40707	·37655	+ ·00207	+ ·15463	·41215	·37837	− ·00376	+ ·16337
	1051	Pothikal ...	18 32 30	80 54 0	·40638	·37566	+ ·00143	+ ·15498	·41149	·37762	− ·00451	+ ·16341
	722	Nagaram ...	18 20 50	80 25 40	·40661	·37816	+ ·00315	+ ·14940	·41167	·38015	− ·00278	+ ·15797
	723	Biaram ...	18 3 13	80 44 20	·40666	·37959	+ ·00253	+ ·14585	·41179	·38179	− ·00354	+ ·15426
65 C	724	Burgampol ...	17 38 25	80 52 10	·40486	·38060	+ ·00140	+ ·13804	·40993	·38294	− ·00460	+ ·14623
	382	Mānukota ...	17 36 0	80 0 10	·40501	·38080	+ ·00588	+ ·13780	·41000	·38300	− ·00012	+ ·14633
	383	Bonakālu ...	17 2 0	80 15 50	·39971	·37795	− ·00175	+ ·13006	·40472	·38029	− ·00782	+ ·13823
65 D	XLVIII	BEZWĀDA ...	16 31 0	80 36 50	·39985	·38084	− ·00236	+ ·12180	·40488	·38345	− ·00856	+ ·12968
	708	Phirangipuram ...	16 17 50	80 15 40	·40244	·38446	− ·00308	+ ·11892	·40746	·38705	− ·00934	+ ·12700

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
65 E	1045	Narainpur ...	19 43 10	81 14 50	·41167	·37535	+ ·00409	+ ·16901	·41680	·37705	− ·00178	+ ·17764
	1046	Kondagaon ...	19 35 10	81 40 10	·41334	·37690	+ ·00275	+ ·16967	·41853	·37867	− ·00327	+ ·17824
	1048	Barsur ...	19 8 10	81 23 20	·41058	·37658	+ ·00176	+ ·16359	·41576	·37844	− ·00426	+ ·17208
	1049	Bhairamgarh ...	19 0 30	81 2 40	·41058	·37764	+ ·00196	+ ·16111	·41566	·37946	− ·00402	+ ·16962
65 F	1047	Kinepal ...	18 58 36	81 36 40	·41026	·37703	+ ·00234	+ ·16173	·41542	·37897	− ·00369	+ ·17015
	955	Thakawada ...	18 44 30	81 48 30	·40879	·37709	+ ·00178	+ ·15782	·41401	·37923	− ·00432	+ ·16605
	957	Malkanagiri ...	18 21 50	81 53 30	·40970	·38050	+ ·00143	+ ·15192	·41493	·38279	− ·00473	+ ·16006
	1052	Chintulnar ...	18 20 50	81 11 10	·40871	·37939	+ ·00302	+ ·15198	·41388	·38155	− ·00304	+ ·16033
65 G	958	Pusigudiam ...	17 53 0	81 31 10	·40629	·38061	+ ·00148	+ ·14216	·41144	·38301	− ·00468	+ ·15024
	725	Dummapett ...	17 17 17	81 0 10	·40404	·38125	− ·00014	+ ·13376	·40909	·38368	− ·00633	+ ·14178
	705	Rājahmundry ...	17 0 35	81 46 20	·40460	·38268	+ ·00061	+ ·13136	·40975	·38540	− ·00566	+ ·13903
65 H	706	Bhīmadōl ...	16 48 40	81 15 30	·40253	·38213	− ·00030	+ ·12653	·40757	·38478	− ·00657	+ ·13423
	707	Masulipatam ...	16 11 30	81 7 40	·39888	·38079	− ·00081	+ ·11875	·40396	·38365	− ·00706	+ ·12630
65 I	943	Raigarh ...	19 53 20	82 4 20	·41509	·37604	+ ·00474	+ ·17570	·42036	·37784	− ·00136	+ ·18423
	952	Junāgarh ...	19 51 53	82 56 10	·41512	·37683	+ ·00113	+ ·17412	·42033	·37869	− ·00497	+ ·18232
	953	Jamgaon or Jaipatna...	19 28 10	82 48 20	·41312	·37752	+ ·00149	+ ·16778	·41832	·37954	− ·00462	+ ·17585
	944	Dabgaon ...	19 27 0	82 24 40	·41236	·37653	+ ·00232	+ ·16810	·41758	·37852	− ·00377	+ ·17630
	954	Jagdalpur ...	19 5 40	82 1 40	·40938	·37666	+ ·00291	+ ·16037	·41451	·37870	− ·00317	+ ·16851
65 J	945	Jeypore ...	18 51 34	82 34 40	·40518	·37339	+ ·00259	+ ·15731	·41038	·37566	− ·00352	+ ·16517
	956	Govindpilli ...	18 34 50	82 17 0	·41003	·37987	+ ·00210	+ ·15434	·41519	·38212	− ·00405	+ ·16235
	946	Padwa ...	18 22 20	82 40 40	·40919	·38023	+ ·00074	+ ·15116	·41443	·38268	− ·00549	+ ·15900
65 K	1058	Kodasanta ...	17 46 3	82 33 40	·40647	·38181	+ ·00500	+ ·13931	·41154	·38445	− ·00123	+ ·14685
	703	Tuni ...	17 21 30	82 32 10	·40551	·38220	+ ·00011	+ ·13551	·41066	·38491	− ·00623	+ ·14297
65 L	701	Cocanāda (Port) ...	16 56 20	82 14 10	·40199	·38092	− ·00030	+ ·12848	·40714	·38373	− ·00662	+ ·13591
65 M	951	Dadpur ...	19 58 40	83 14 10	·41506	·37632	+ ·00216	+ ·17506	·42028	·37826	− ·00399	+ ·18315
	950	Tikirapara ...	19 37 40	83 29 20	·41407	·37763	+ ·00245	+ ·16982	·41930	·37973	− ·00378	+ ·17775
	1061	Sirgudi ...	19 25 20	83 49 0	·41410	·37877	+ ·00268	+ ·16735	·41938	·38103	− ·00364	+ ·17517
	949	Rāyagada ...	19 9 50	83 24 40	·41201	·37850	+ ·00156	+ ·16275	·41725	·38080	− ·00469	+ ·17050
	1060	Jugganatpoorum ...	19 1 50	83 46 30	·41269	·37984	+ ·00251	+ ·16133	·41797	·38227	− ·00383	+ ·16897
65 N	948	Bobbili ...	18 34 30	83 21 10	·41003	·37968	+ ·00163	+ ·15483	·41527	·38215	− ·00470	+ ·16245
	701	Chicacole Road ...	18 24 30	83 54 20	·41022	·38105	+ ·00144	+ ·15192	·41548	·38367	− ·00499	+ ·15934
	947	Raiawalsa ...	18 13 50	83 1 30	·40770	·38000	+ ·00326	+ ·14768	·41294	·38260	− ·00307	+ ·15535
	702	Vizianagram ...	18 6 40	83 24 0	·41409	·38336	− ·00202	+ ·15649	·41946	·38594	− ·00844	+ ·16410
65 O	XII	WALTAIR ...	17 42 23	83 17 44	·40781	·38123	+ ·00161	+ ·14482	·41313	·38403	− ·00484	+ ·15225
66 A	385	Bāpatla ...	15 54 30	80 27 40	·39502	·37811	+ ·00200	+ ·11428	·40003	·38095	− ·00412	+ ·12198
	386	Ongole ...	15 30 20	80 3 20	·39822	·38597	+ ·01208	+ ·09728	·40298	·38903	+ ·00591	+ ·10494
66 C	388	Arambakkam ...	13 32 40	80 4 30	·38985	·38237	− ·00459	+ ·07587	·39452	·38558	− ·01111	+ ·08280
	XXXVII	PERAMBŪR ...	13 6 40	80 15 0	38931	·38294	− ·00422	+ ·07001	39396	38627	− ·01074	+ ·07669
67 C	1375	Jaffna ...	9 39 25	80 0 40	·38407	·38373	− ·00788	+ ·01385	·38804	·38728	− ·01491	+ ·01932
	1376	Elephant Pass ...	9 31 17	80 24 20	·38292	·38263	− ·00892	+ ·01203	·38692	·38621	− ·01602	+ ·01715
	1373	Mullaittivu ...	9 16 13	80 48 50	·38242	·38226	− ·00909	+ ·00634	·38638	·38587	− ·01632	+ ·01115
	1374	Mankulam ...	9 7 39	80 27 0	·38248	·38224	− ·00791	+ ·01089	·38645	·38582	− ·01506	+ ·01594
67 D	1372	Vavuniya ...	8 45 30	80 30 20	·38265	·38254	− ·00738	+ ·00462	·38657	·38618	− ·01460	+ ·00948
	1367	Horowupotana ...	8 33 10	80 49 50	·38234	·38223	− ·00867	− ·00308	·38622	·38589	− ·01597	+ ·00138
	1366	Anuradhapura ...	8 21 10	80 23 10	·38194	·38174	− ·01061	− ·00554	·38574	·38532	− ·01785	− ·00092
	1369	Alutoya ...	8 13 15	80 54 0	·38284	·38261	− ·00979	− ·00900	·38667	·38626	− ·01711	− ·00471
	1395	Kekirawa ...	8 2 8	80 36 20	·38220	·38190	− ·01022	− ·01106	·38600	·38554	− ·01760	− ·00668
	1365	Galgamuwa ...	8 0 50	80 16 0	·38128	·38097	− ·00950	+ ·01219	·38501	·38457	− ·01678	− ·00764
67 H	1368	Trincomalee ...	8 34 40	81 14 10	·38374	·38362	− ·00976	− ·00247	·38769	·38730	− ·01717	+ ·00183
68 A	1371	Dambulla ...	7 52 40	80 39 20	·38311	·38223	+ ·00403	− ·02570	·38673	·38613	− ·00316	− ·02151
	1396	Nālanda ...	7 40 10	80 38 20	·38191	·38138	− ·01063	− ·01700	·38564	·38502	− ·01801	− ·01274
	1364	Kurunegala ...	7 28 50	80 21 50	·38048	·37979	− ·01111	− ·01987	·38417	·38341	− ·01845	− ·01565
	1397	Nugatenni ...	7 18 0	80 51 20	·38216	·38136	− ·01008	− ·02255	·38590	·38505	− ·01752	− ·01859
	1382	Kandy ...	7 17 40	80 37 40	·38342	·38272	− ·01257	− ·01961	·38719	·38636	− ·02000	− ·01548
	1362	Yatiyantota ...	7 2 0	80 17 20	·38393	·38290	− ·01047	− ·02615	·38751	·38647	− ·01788	− ·02195
68 B	1383	Nuwara Eliya ...	6 57 39	80 46 20	·38176	·38051	− ·01068	− ·02886	·38543	·38418	− ·01812	− ·02503
	1384	Haputale ...	6 46 0	80 57 50	·38144	·38302	− ·01053	− ·03114	·38510	·38369	− ·01802	− ·02747
	1363	Ratnapura ...	6 41 40	80 24 20	·38170	·38026	− ·01077	− ·03138	·38522	·38380	− ·01819	− ·02743
	1357	Bentota ...	6 25 50	80 0 10	·38069	·37884	− ·01119	− ·03569	·38397	·38222	− ·01852	− ·03166
	1360	Deniyaya ...	6 21 20	80 33 40	·38139	·37940	− ·01154	− ·03714	·38487	·38294	− ·01902	− ·03344
	LXXV	GALLE ...	6 1 50	80 12 10	·38126	·37870	− ·01212	− ·04237	·38456	·38211	− ·01952	− ·03858
68 C	1359	Matara ...	5 57 50	80 33 10	·38136	·37874	− ·01141	− ·04319	·38468	·38216	− ·01887	− ·03966
68 E	1370	Topa Wewa ...	7 56 37	81 0 10	·38312	·38278	− ·01020	− ·01273	·38695	·38646	− ·01761	− ·00860

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″	Bhā							
68 E	1393	Kalcudah ...	7 55 20	81 34 50	·38337	·38296	−·01039	−·01458	·38725	·38668	−·01793	−·01073
	1389	Batticaloa ...	7 42 31	81 42 40	·38285	·38235	−·00982	−·01703	·38675	·38613	−·01742	−·01334
	1394	Mahaoya ...	7 32 4	81 21 20	·38253	·38187	−·00982	−·02022	·38635	·38560	−·01734	−·01649
	1392	Kalmunai ...	7 24 50	81 50 40	·38275	·38209	−·01018	−·02039	·38663	·38586	−·01785	−·01685
	1388	Bibile ...	7 9 28	81 14 10	·38216	·38123	−·01058	−·02436	·38594	·38496	−·01817	−·02068
	1391	Tirukovil ...	7 7 50	81 52 10	·38304	·38189	−·01097	−·02750	·38686	·38565	−·01865	−·02416
68 F	1390	Pottuvil ...	6 52 30	81 50 30	·38342	·38219	−·01041	−·02897	·38723	·38595	−·01809	−·02564
	1387	Muppane ...	6 51 50	81 21 30	·38000	·37878	−·01350	−·02717	·38376	·38245	−·02114	−·02366
	1385	Tanamalwila ...	6 25 52	81 8 10	·38156	·37971	−·01114	−·03582	·38518	·38335	−·01876	−·03238
	1386	Kirinde ...	6 13 9	81 20 50	·38182	·37964	−·01144	−·03911	·38542	·38327	−·01914	−·03581
	1361	Ambalantota ...	6 7 14	81 1 40	·38158	·37932	−·01120	−·04000	·38511	·38290	−·01882	−·03664
72 B	LIII	BETTIAH ...	26 48 50	84 31 30	·45038	·35419	+·01087	+·27798	·45541	·35343	+·00504	+·28716
	529	Pipra ...	26 29 30	84 59 10	·45058	·35629	+·01229	+·27555	·45564	·35577	+·00635	+·28460
	526	Siwān ...	26 12 30	84 20 40	·44582	·35598	+·00927	+·26823	·45079	·35541	+·00341	+·27727
72 C	999	Ekma ...	25 58 10	84 32 10	·43975	·34870	+·00594	+·26788	·44503	·34829	+·00021	+·27703
	527	Chāpra ...	25 48 10	84 43 20	·44900	·35970	+·00308	+·26873	·45421	·35931	−·00290	+·27785
	997 (*a*)	Ballia ...	25 45 10	84 10 10	·44367	·35468	+·00651	+·26646	·44887	·35428	+·00068	+·27562
	960	Dumraon ...	25 34 40	84 7 30	·43850	·35432	+·00149	+·25834	·44354	·35388	−·00432	+·26734
	1064	Arrah ...	25 33 0	84 40 20	·44465	·35997	+·00861	+·26089	·44983	·35982	+·00263	+·26994
	1063	Ghoorsaree ...	25 22 30	84 9 10	·45053	·36548	+·00572	+·26338	·45577	·36522	−·00029	+·27267
	511	Jahānābād ...	25 13 40	84 59 50	·44304	·36166	+·00821	+·25577	·44816	·36166	+·00215	+·26465
72 D	487	Palmerganj ...	24 51 40	84 19 50	·43977	·36034	+·00747	+·25201	·44497	·36038	+·00150	+·26100
	XIV	GAYĀ ...	24 47 7	84 59 47	·44468	·36658	+·00755	+·25162	·44996	·36680	+·00141	+·26061
	881	Imāmganj ...	24 27 20	84 34 50	·43888	·36522	+·00677	+·24328	·44398	·36547	+·00065	+·25209
	882	Chatrā ...	24 12 10	84 53 0	·43526	·36470	+·00809	+·23744	·44033	·36515	+·00198	+·24607
	486 (*a*)	Daltonganj ...	24 2 10	84 3 40	·43656	·36662	+·00842	+·23686	·44172	·36701	+·00239	+·24579
72 F	531	Bairagnia ...	26 43 50	85 16 30	·45158	·35401	+·01003	+·28016	·45670	·35339	+·00414	+·28925
	528	Muzaffarpur ...	26 6 30	85 22 30	·45003	·35957	+·00951	+·27046	·45517	·35928	+·00353	+·27943
	534	Darbhangā ...	26 6 0	85 54 20	·44796	·35691	+·00896	+·27056	·45307	·35668	+·00297	+·27938
72 G	998	Dighwāra ...	25 44 30	85 0 40	·44473	·35862	+·00784	+·26290	·44983	·35834	+·00188	+·27191
	510	Patna ...	25 35 30	85 12 20	·44362	·35963	+·00841	+·25959	·44865	·35948	+·00238	+·26843
	509	Bārh ...	25 28 20	85 42 50	·44607	·36059	+·00925	+·26243	·45128	·36061	+·00308	+·27129
72 H	488	Nawāda ...	24 52 30	85 32 50	·44268	·36470	+·00765	+·25080	·44780	·36498	+·00148	+·25944
	877	Ganwan ...	24 37 10	85 55 20	·44100	·36453	+·00960	+·24800	·44615	·36501	+·00331	+·25653
	880	Chorpāran ...	24 22 30	85 15 40	·43854	·36451	+·00709	+·24372	·44367	·36494	+·00092	+·25232
	878	Bagodar ...	24 4 50	85 49 30	·43782	·36586	+·00728	+·24036	·44299	·36652	+·00103	+·24879
72 J	533	Nirmali ...	26 18 0	86 34 0	·44935	·35747	+·01003	+·27208	·45438	·35725	+·00385	+·28076
72 K	844	Madhipurā ...	25 55 40	86 47 30	·44979	·36061	+·00854	+·26869	·45487	·36058	+·00224	+·27729
	L	MONGHYR ...	25 23 10	86 27 50	·44555	·36260	+·00858	+·25877	·45065	·36279	+·00225	+·26733
	490	Bhāgalpur ...	25 14 0	86 57 40	·44555	·36316	+·00688	+·25804	·45062	·36344	+·00054	+·26640
72 L	508	Gidhaur ...	24 52 20	86 18 0	·44273	·36453	+·00834	+·25113	·44786	·36493	+·00199	+·25960
	507	Baidyanāth ...	24 30 50	86 38 0	·44099	·36502	+·00815	+·24597	·44607	·36650	+·00172	+·25428
	876	Deogarh ...	24 29 0	86 41 0	·44168	·36616	+·00783	+·24688	·44686	·36683	+·00139	+·25519
	506	Giridih ...	24 10 50	86 19 20	·43784	·36657	+·00707	+·23934	·44290	·36723	+·00068	+·24759
72 N	532	Khanwaghat ...	26 22 10	87 3 20	·45016	·35698	+·00806	+·27414	·45530	·35685	+·00188	+·28277
	842	Kishanganj ...	26 5 50	87 56 50	·45080	·36086	+·00903	+·27003	·45592	·36102	+·00267	+·27843
72 O	843	Purnea ...	25 46 30	87 31 10	·45047	·36155	+·00756	+·26861	·45555	·36168	+·00119	+·27699
	841	Bārsoi ...	25 38 50	87 55 40	·44899	·36131	+·00889	+·26640	·45405	·36157	+·00252	+·27462
	491	Sāhibganj ...	25 14 50	87 38 20	·44739	·36518	+·00744	+·25836	·45250	·36564	+·00100	+·26659
72 P	675	Goddā ...	24 50 20	87 12 30	·44073	·36154	+·00596	+·25108	·44576	·36202	−·00046	+·26009
	492	Pākaur ...	24 38 50	87 51 40	·44043	·36443	+·00723	+·24721	·44540	·36516	+·00075	+·25504
	874	Dumkā ...	24 15 45	87 14 40	·43946	·36649	+·00870	+·24237	·44448	·36728	+·00234	+·25032
73 A	883	Balumath ...	23 50 10	84 47 40	·44053	·37124	+·00723	+·23707	·44576	·37183	+·00101	+·24584
	885	Lātehār ...	23 45 10	84 29 50	·43862	·36991	+·00769	+·23559	·44385	·37051	+·00156	+·24440
	884	Lohārdagā ...	23 25 30	84 41 10	·43224	·36785	+·00692	+·22686	·43741	·36861	+·00076	+·23549
73 B	906	Jashpur ...	22 52 40	84 8 30	·43078	·36952	+·00589	+·22135	·43590	·37042	−·00018	+·22996
	1032	Kolebira ...	22 42 20	84 42 0	·43157	·37134	+·00631	+·21982	·43678	·37235	+·00021	+·22832
	755	Rourkela ...	22 13 40	84 51 30	·42554	·37012	+·00407	+·20996	·43078	·37142	−·00209	+·21821
	756	Bāmrā ...	22 3 30	84 17 30	·42537	·37022	+·00582	+·20939	·43064	·37149	−·00027	+·21782
73 C	1166	Bonaigarh ...	21 49 0	84 57 30	·42636	·37304	+·00226	+·20644	·43155	·37442	−·00395	+·21455
	1165	Boraghat ...	21 31 35	84 33 30	·42619	·37512	+·00602	+·20219	·43148	·37608	−·00014	+·21045
	937	Charmal ...	21 6 20	84 12 50	·42291	·37566	+·00445	+·19421	·42814	·37730	−·00173	+·20236
73 D	936	Hond pa ...	20 56 30	84 4 10	·42286	·37705	+·00478	+·19137	·42820	·37892	−·00149	+·19944
	939	Bisapara ...	20 24 50	84 12 30	·41824	·37665	+·00401	+·18179	·42350	·37861	−·00226	+·18972
	941	Daspallā ...	20 18 40	84 54 0	·41943	·37804	+·00396	+·18165	·42466	·38011	−·00233	+·18934
	940	Mojagodo ...	20 1 10	84 31 0	·41801	·37870	+·00338	+·17693	·42332	·38087	−·00292	+·18474

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0				1920·0			
					Total Force F cgs	Components North X cgs	Components E. or W. Y cgs	Components Vertical Z cgs	Total Force F cgs	Components North X cgs	Components E. or W. Y cgs	Components Vertical Z cgs
			° ′ ″	° ′ ″								
73 E	879	Hazāribāgh ...	23 59 40	85 22 10	·43875	·36850	+ ·00702	+ ·23803	·44398	·36915	+ ·00078	+ ·24667
	1030	Rānchī ...	23 22 40	85 19 30	·43261	·36672	+ ·00826	+ ·22936	·43780	·36760	+ ·00212	+ ·23777
	1029	Silli ...	23 21 10	85 30 40	·43412	·36749	+ ·00705	+ ·23100	·43934	·36846	+ ·00083	+ ·23928
	1031	Jeria ...	23 2 40	85 1 0	·43139	·36888	+ ·00551	+ ·22360	·43657	·36983	− ·00068	+ ·23198
73 F	LI	SINI ...	22 47 0	85 56 50	·43330	·37367	+ ·00658	+ ·21927	·43840	·37486	+ ·00025	+ ·22732
	1173	Chaibāsa ...	22 32 30	85 48 30	·42889	·37055	+ ·00719	+ ·21585	·43405	·37186	+ ·00092	+ ·22388
	754	Goilkera ...	22 30 20	85 21 30	·42930	·37201	+ ·00668	+ ·21419	·43444	·37324	− ·00015	+ ·22232
	1172	Jaintigarh ...	22 4 10	85 40 40	·42715	·37280	+ ·00654	+ ·20839	·43230	·37432	+ ·00029	+ ·21640
73 G	1171	Keonjhar ...	21 37 40	85 35 30	·42470	·37394	+ ·00485	+ ·20128	·42987	·37559	− ·00142	+ ·20909
	1167	Pāl Laharā ...	21 25 50	85 11 30	·42320	·37394	+ ·00288	+ ·19815	·42845	·37561	− ·00340	+ ·20609
	1170	Gutgaon ...	21 24 10	85 53 20	·42479	·37527	+ ·00539	+ ·19898	·43002	·37709	− ·00097	+ ·20670
	1169	Kantolo ...	21 7 20	85 37 40	·42272	·37334	+ ·00459	+ ·19822	·42810	·37527	− ·00174	+ ·20603
73 H	1168	Tālcher ...	20 57 10	85 14 30	·42309	·37662	+ ·00594	+ ·19269	·42838	·37856	− ·00037	+ ·20051
	935	Rasul ...	20 37 20	85 19 10	·42229	·37860	+ ·00560	+ ·18697	·42759	·38070	− ·00082	+ ·19469
	695	Cuttack ...	20 27 20	85 53 50	·42007	·37814	− ·00044	+ ·18294	·42528	·38025	− ·00688	+ ·19032
	697	Tāpang ...	20 3 20	85 34 50	·41946	·37917	+ ·00320	+ ·17935	·42471	·38144	− ·00325	+ ·18672
73 I	873	Jāmtāra ...	23 58 40	86 48 50	·43735	·36646	+ ·00755	+ ·23859	·44245	·36730	+ ·00110	+ ·24668
	505	Kātrāsgarh ...	23 48 0	86 18 0	·43653	·36773	+ ·00725	+ ·23513	·44162	·36855	+ ·00091	+ ·24331
	501	Purūlia ...	23 19 30	86 22 50	·43822	·37332	+ ·00762	+ ·22937	·44331	·37437	+ ·00119	+ ·23744
73 J	499	Ghātsila ...	22 35 0	86 28 20	·43113	·37149	+ ·00634	+ ·21870	·43627	·37284	− ·00007	+ ·22657
	1174	Rairangpur ...	22 15 21	86 11 0	·42876	·37195	+ ·00582	+ ·21319	·43397	·37346	− ·00048	+ ·22105
73 K	1176	Baripādā ...	21 55 50	86 43 0	·42781	·37359	+ ·00292	+ ·20842	·43295	·37521	− ·00354	+ ·21597
	1175	Kusmi ...	21 50 0	86 15 10	·42991	·37854	+ ·00142	+ ·20379	·43502	·38014	− ·00506	+ ·21146
	LIX	BALASORE ...	21 30 30	86 54 40	·42629	·37574	+ ·00421	+ ·20132	·43147	·37762	− ·00228	+ ·20872
	693	Bhadrakh ...	21 5 10	86 31 0	·42584	·37844	+ ·00340	+ ·19521	·43104	·38046	− ·00314	+ ·20260
73 L	694	Jenapur ...	20 51 30	86 4 10	·42024	·37433	+ ·00407	+ ·19095	·42551	·37641	− ·00228	+ ·19841
	1180	Chāndbali ...	20 46 10	86 43 40	·42515	·37965	+ ·00181	+ ·19140	·43033	·38172	− ·00472	+ ·19863
	1179	Balikuda ...	20 8 30	86 16 10	·42101	·38094	+ ·00278	+ ·17922	·42622	·38327	− ·00376	+ ·18642
73 M	494	Sainthia ...	23 56 50	87 41 20	·43834	·36784	+ ·00678	+ ·23831	·44327	·36877	+ ·00025	+ ·24596
	504	Rāniganj ...	23 35 30	87 7 30	·43699	·37049	+ ·00724	+ ·23161	·44198	·37154	+ ·00072	+ ·23938
	495	Burdwān ...	23 15 0	87 52 40	·43589	·37132	+ ·00584	+ ·22824	·44084	·37256	− ·00076	+ ·23566
	502	Bānkurā ...	23 13 30	87 4 10	·43674	·37184	+ ·00752	+ ·22893	·44185	·37306	+ ·00098	+ ·23675
73 N	503	Garbeta ...	22 50 40	87 18 50	·43581	·37205	+ ·00342	+ ·22694	·44107	·37341	− ·00314	+ ·23471
	498	Midnapore ...	22 25 20	87 17 30	·43150	·37307	+ ·00548	+ ·21675	·43655	·37458	− ·00109	+ ·22421
73 O	1177	Dāntān ...	21 56 10	87 16 40	·42690	·37254	+ ·00548	+ ·20839	·43200	·37427	− ·00101	+ ·21572
	1178	Contai ...	21 46 40	87 44 30	·42808	·37600	+ ·00436	+ ·20456	·43305	·37782	− ·00226	+ ·21160
74 A	1062	Govindpur ...	19 29 50	84 25 20	·41517	·37927	+ ·00367	+ ·16885	·42044	·38161	− ·00264	+ ·17643
	LX	BERHAMPUR (Ganjām) ...	19 18 10	84 48 40	·41491	·38017	+ ·00197	+ ·16615	·42022	·38266	− ·00445	+ ·17362
74 B	1059	Parlakimedi ...	18 47 10	84 5 0	·41196	·38040	+ ·00204	+ ·15811	·41722	·38293	− ·00431	+ ·16560
	700	Palasa ...	18 45 20	84 26 0	·41284	·38142	+ ·00159	+ ·15799	·41812	·38401	− ·00485	+ ·16536
74 E	696	Purī ...	19 48 40	85 50 10	·41955	·38125	+ ·00283	+ ·17511	·42483	·38369	− ·00365	+ ·18235
	698	Rambha ...	19 32 0	85 6 0	·41719	·38054	+ ·00143	+ ·17097	·42247	·38295	− ·00499	+ ·17836
78 B	XIII	DARJEELING ...	26 59 42	88 16 56	·45526	·35652	+ ·00956	+ ·28296	46026	·35630	+ ·00339	+ ·29133
	839	Siliguri ...	26 42 20	88 26 10	·45351	·35672	+ ·01091	+ ·27982	·45850	·35669	+ ·00467	+ ·28806
	1001	Tariya ...	26 15 40	88 23 40	·45220	·36125	+ ·00899	+ ·27184	·45712	·36135	+ ·00262	+ ·27996
	838	Chilhāti ...	26 14 30	88 48 10	·45141	·35954	+ ·00946	+ ·27278	·45635	·35977	+ ·00312	+ ·28074
78 C	1000	Banisankail ...	25 54 8	88 15 10	·44821	·35064	+ ·00893	+ ·26734	·45318	·35990	+ ·00259	+ ·27538
	836	Pārbatīpur ...	25 39 10	88 55 10	·45003	·36248	+ ·00861	+ ·26657	·45497	·36290	+ ·00222	+ ·27438
	840	Radhikāpur ...	25 38 30	88 26 50	·45022	·36255	+ ·00816	+ ·26681	·45526	·36296	+ ·00177	+ ·27481
78 D	829	Bulbulchandī ...	24 58 50	88 14 30	·44463	·36334	+ ·00833	+ ·25617	·44960	·36397	+ ·00187	+ ·26393
	LXV	SANTAHAR ...	24 48 10	88 59 20	·44514	·36687	+ ·00874	+ ·25196	·45001	·36773	+ ·00216	+ ·25936
	828	Nawābganj ...	24 35 40	88 16 0	·44466	·36665	+ ·00945	+ ·25033	·44907	·36747	+ ·00294	+ ·25811
	830	Mālānchi ...	24 18 40	88 57 50	·44567	·36970	+ ·00566	+ ·24882	·45054	·37067	− ·00098	+ ·25611
	493	Azimganj ...	24 14 10	88 15 10	·44276	·36964	+ ·00646	+ ·24455	·44767	·36992	− ·00010	+ ·25212
78 F	845	Banarhat ...	26 47 30	89 1 20	·45586	·35693	+ ·00918	+ ·28343	·46084	·35692	+ ·00294	+ ·29150
	835	Jainti ...	26 41 24	89 36 30	·44969	·35141	+ ·01289	+ ·28029	·45459	·35158	+ ·00674	+ ·28809
	834	Cooch Behār ...	26 18 30	89 26 20	·45396	·36025	+ ·00977	+ ·27606	·45888	·36059	+ ·00336	+ ·28380
	846	Dhubrighāt ...	26 1 2	89 59 50	·45302	·36328	+ ·00753	+ ·27057	·45778	·36379	+ ·00106	+ ·27790
78 G	833	Kaunia ...	25 47 10	89 25 0	·45106	·36183	+ ·00895	+ ·26916	·45601	·36237	+ ·00251	+ ·27682
	LXXVI	PHULCHARI ...	25 11 40	89 37 0	·44692	·36397	+ ·00808	+ ·25923	·45167	·36472	+ ·00155	+ ·26643
	837	Panchabibi ...	25 11 30	89 1 40	·44624	·36374	+ ·00919	+ ·25834	·45115	·36645	+ ·00266	+ ·26591

Note :— Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
78 H	821	Jagannāthganj ...	24 41 10	89 45 50	·44683	·36830	+ ·00538	+ ·25294	·45153	·36922	− ·00124	+ ·25991
	822	Porabari ...	24 13 17	89 51 30	·44274	·36887	+ ·00777	+ ·24474	·44735	·37005	+ ·00115	+ ·25137
78 J	1002	Cherpanguri ...	26 33 2	90 8 10	·45506	·35862	+ ·00852	+ ·27999	·45990	·35893	+ ·00219	+ ·28751
	1003	Bijni ...	26 28 50	90 42 10	·45597	·36148	+ ·00803	+ ·27781	·46066	·36190	+ ·00165	+ ·28501
	847	Goālpāra ...	26 11 10	90 37 40	·45212	·36124	+ ·00949	+ ·27173	·45675	·36178	+ ·00305	+ ·27879
78 K	1009	Rongrenggiri ...	25 33 0	90 33 20	·45067	·36558	+ ·00662	+ ·26346	·45530	·36636	+ ·00004	+ ·27033
	1008	Nongsobal ...	25 32 8	90 52 50	·45179	·36715	+ ·00956	+ ·26312	·45626	·36804	+ ·00297	+ ·26966
	1010	Damalgiri ...	25 31 40	90 6 50	·45344	·36538	+ ·01406	+ ·26816	·45821	·36624	+ ·00750	+ ·27525
	1011	Nalitābāri ...	25 5 10	90 11 10	·44646	·36678	+ ·00493	+ ·25451	·45097	·36758	− ·00166	+ ·26126
78 L	1012	Asma ...	24 54 10	90 53 20	·44694	·36700	+ ·00724	+ ·25498	·45137	·36806	+ ·00059	+ ·26128
	820	Mymensingh ...	24 46 0	90 23 40	·44624	·36705	+ ·00829	+ ·25366	·45081	·36813	+ ·00164	+ ·26020
	819	Sripur ...	24 12 50	90 29 0	·44303	·36968	+ ·00717	+ ·24405	·44733	·37085	+ ·00054	+ ·25016
78 N	1005	Jiabor ...	26 43 33	91 42 30	·45758	·35972	+ ·00929	+ ·28267	·46209	·36021	+ ·00288	+ ·28943
	1004	Eatacharkuchi ...	26 30 40	91 14 10	·45244	·35663	+ ·01272	+ ·27813	·45699	·35719	+ ·00637	+ ·28498
	848	Kholabanda ...	26 10 0	91 8 16	·45295	·36112	+ ·00872	+ ·27328	·45747	·36172	+ ·00223	+ ·28006
	LXXVII	PALĀSBĀRI ...	26 7 40	91 32 40	·45373	·36170	+ ·00875	+ ·27380	·45823	·36241	+ ·00218	+ ·28039
78 O	863	Shillong ...	25 35 4	91 53 40	·44980	·36490	+ ·00713	+ ·26291	·45397	·36579	+ ·00045	+ ·26886
	1007	Maokersa ...	25 31 10	91 25 0	·44559	·36374	+ ·00666	+ ·25730	·44982	·36463	+ ·00005	+ ·26341
	1014	Sunāmganj ...	25 4 10	91 23 30	·44860	·36736	+ ·00792	+ ·25735	·45291	·36843	+ ·00120	+ ·26341
78 P	1015	Sylhet ...	24 53 0	91 52 0	·44772	·36777	+ ·00735	+ ·25523	·45189	·36895	+ ·00062	+ ·26091
	1013	Ajmiriganj or Abidābād	24 33 50	91 14 10	·44590	·36881	+ ·00742	+ ·25051	·45011	·36998	+ ·00074	+ ·25636
	868	Tilāgāon ...	24 26 40	91 57 30	·44594	·36987	+ ·00722	+ ·24901	·44992	·37115	+ ·00052	+ ·25432
	869	Shāistāganj ...	24 16 50	91 26 10	·44432	·36988	+ ·00699	+ ·24609	·44846	·37116	+ ·00029	+ ·25170
	1182	Singurajabari ...	24 7 57	91 53 50	·44398	·37095	+ ·00689	+ ·24385	·44801	·37233	+ ·00016	+ ·24916
79 A	827	Plassey ...	23 46 20	88 17 10	·43950	·37160	+ ·00454	+ ·23466	·44435	·37265	− ·00207	+ ·24202
	825	Chuādānga ...	23 38 40	88 51 40	·43796	·36973	+ ·00710	+ ·23463	·44269	·37094	+ ·00053	+ ·24162
	826	Krishnagar ...	23 22 39	88 29 10	·43655	·37047	+ ·00777	+ ·23080	·44140	·37181	+ ·00119	+ ·23789
	811	Bangong ...	23 1 50	88 50 20	·43538	·37263	+ ·00636	+ ·22510	·44011	·37405	− ·00021	+ ·23190
79 B	LXXIV	BARRACKPORE ...	22 46 29	88 21 39	...	...	...	...	·43846	·37470	+ ·00027	+ ·22771
		BARRACKPORE OBSERVATORY ...	22 46 29	88 21 39	·43345	·37303	+ ·00680	+ ·22064	...	...	...	...
	496	Calcutta ...	22 33 40	88 17 30	·43239	·37351	+ ·00660	+ ·21774	·43725	·37510	+ ·00001	+ ·22469
	497	Ulubāria ...	22 28 20	88 6 20	·43183	·37403	+ ·00495	+ ·21575	·43670	·37565	− ·00165	+ ·22269
	810	Canning ...	22 18 20	88 39 50	·43139	·37441	+ ·00626	+ ·21418	·43612	·37610	− ·00034	+ ·22080
	809	Diamond Harbour ...	22 11 20	88 11 40	·42986	·37448	+ ·00637	+ ·21096	·43468	·37622	− ·00016	+ ·21772
79 E	824	Kumār Khāli ...	23 51 50	89 14 0	·43889	·36918	+ ·00702	+ ·23724	·44354	·37035	− ·00040	+ ·24407
	823	Faridpur ...	23 37 10	89 51 10	·43904	·37103	+ ·00705	+ ·23461	·44345	·37231	+ ·00039	+ ·24090
	812	Jessore ...	23 9 50	89 12 40	·43624	·37221	+ ·00646	+ ·22744	·44084	·37364	− ·00010	+ ·23396
79 F	813	Khulnā ...	22 49 0	89 33 20	·43464	·37319	+ ·00621	+ ·22273	·43912	·37472	− ·00037	+ ·22891
	815	Morelganj ...	22 27 10	89 51 50	·43388	·37545	+ ·00557	+ ·21740	·43830	·37749	− ·00105	+ ·22323
79 I	818	Dolāiganj ...	23 42 8	90 25 30	·44019	·37084	+ ·00635	+ ·23708	·44453	·37221	− ·00030	+ ·24304
	816	Chāndpur ...	23 14 0	90 38 0	·43851	·37328	+ ·00628	+ ·23003	·44274	·37481	− ·00037	+ ·23566
	817	Mādāripur ...	23 10 50	90 12 30	·43764	·37311	+ ·00633	+ ·22864	·44193	·37459	− ·00032	+ ·23448
79 J	814	Barisāl ...	22 41 10	90 22 0	·43475	·37478	+ ·00568	+ ·22025	·43890	·37642	− ·00100	+ ·22573
79M	870	Kamalasagar ...	23 44 40	91 9 10	·44119	·37179	+ ·00687	+ ·23744	·44528	·37322	+ ·00020	+ ·24286
	1181	Amarpur ...	23 31 58	91 39 30	·44023	·37264	+ ·00637	+ ·23430	·44421	·37417	− ·00026	+ ·23941
	LXVI	LĀKSHAM ...	23 15 40	91 7 20	·43883	·37353	+ ·00630	+ ·23024	·44285	·37506	− ·00035	+ ·23547
	1184	Golabari ...	23 5 0	91 58 50	·43841	·37449	+ ·00617	+ ·22787	·44231	·37613	− ·00050	+ ·23273
79 N	872	Noākhāli ...	22 48 20	91 6 20	·43619	·37495	+ ·00615	+ ·22282	·44022	·37665	− ·00053	+ ·22788
	1028	Mirsarai ...	22 46 40	91 37 50	·43670	·37547	+ ·00608	+ ·22292	·44069	·37722	− ·00060	+ ·22785
	1027	Bhatiyari ...	22 26 10	91 45 0	·43491	·37657	+ ·00592	+ ·21752	·43887	·37842	− ·00074	+ ·22230
83 B	1006	Udalguri ...	26 45 50	92 6 50	·45781	·35943	+ ·00853	+ ·28342	·46224	·35997	+ ·00206	+ ·28997
	851	Tezpur ...	26 37 50	92 48 20	·46385	·36092	+ ·00649	+ ·29131	·46828	·36154	− ·00007	+ ·29761
	850	Mangaldai ...	26 28 40	92 8 20	·45651	·36115	+ ·00958	+ ·27907	·46094	·36183	+ ·00308	+ ·28554
	861	Kāmpur ...	26 9 40	92 39 30	·45345	·36227	+ ·00809	+ ·27261	·45761	·36308	+ ·00151	+ ·27854
	862	Jagi Road ...	26 7 20	92 11 30	·45771	·36433	+ ·00911	+ ·27690	·46203	·36515	+ ·00249	+ ·28307
83 C	864	Shangpang ...	25 28 48	92 21 0	·45022	·36402	+ ·00916	+ ·26478	·45427	·36500	+ ·00250	+ ·27043
	865	Korongma ...	25 26 8	92 43 30	·45228	·36573	+ ·00691	+ ·26599	·45626	·36674	+ ·00020	+ ·27144
83 D	867	Karīmganj ...	24 52 0	92 22 10	·44836	·36838	+ ·00772	+ ·25546	·45231	·36957	+ ·00098	+ ·26078
	XXI	SILCHAR ...	24 49 14	92 47 27	·44928	·36911	+ ·00743	+ ·25605	·45320	·37033	+ ·00068	+ ·26124
	1022	Kalosib ...	24 15 16	92 42 10	·44526	·37099	+ ·00704	+ ·24611	·44914	·37238	+ ·00037	+ ·25111
83 F	852	Behally Mookh ...	26 46 19	93 21 50	·45804	·35924	+ ·00885	+ ·28401	·46214	·35989	+ ·00238	+ ·28990
	858	Oating ...	26 26 13	93 59 30	·45664	·35952	+ ·01006	+ ·28136	·46050	·36031	+ ·00358	+ ·28674

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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1909·0 and 1920·0

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
83 G	859	Manipur Road ...	25 54 50	93 43 50	·45565	·36466	+ ·00669	+ ·27312	·45945	·36555	+ ·00006	+ ·27832
	860	Lumding ...	25 44 52	93 10 41	·45483	·36652	+ ·00800	+ ·26922	·45868	·36744	+ ·00134	+ ·27455
	866	Hāflang ...	25 11 29	93 1 10	·44505	·36288	+ ·00867	+ ·25753	·44883	·36397	+ ·00202	+ ·26262
83 H	1020	Manipur ...	24 48 31	93 56 30	·44847	·36919	+ ·00635	+ ·25452	·45223	·37045	− ·00030	+ ·25938
	1021	Lengbu ...	24 44 39	93 24 10	·44889	·36975	+ ·00667	+ ·25445	·45276	·37102	+ ·00002	+ ·25949
83 I	XXII	DIBRUGARH ...	27 29 12	94 54 35	·46419	·35808	+ ·00773	+ ·29530	·46797	·35851	+ ·00132	+ ·30079
83 J	854	Nāzirā ...	26 54 26	94 43 50	·46085	·35999	+ ·00696	+ ·28765	·46454	·36057	+ ·00047	+ ·29289
	853	Kokila Mookh ...	26 51 9	94 8 54	·45993	·35988	+ ·00835	+ ·28626	·46369	·36048	+ ·00186	+ ·29166
	1016	Mokokchung ...	26 19 40	94 31 50	·45927	·36381	+ ·00672	+ ·28022	·46291	·36454	+ ·00016	+ ·28529
	1017	Wokha ...	26 5 40	94 15 40	·45816	·36549	+ ·00681	+ ·27618	·46187	·36634	+ ·00021	+ ·28129
83 K	1018	Kohīmā ...	25 40 10	94 6 40	·45362	·36558	+ ·00730	+ ·26845	·45736	·36659	+ ·00065	+ ·27348
	1019	Kairong ...	25 18 40	94 2 30	·45146	·36698	+ ·00667	+ ·26287	·45512	·36803	+ ·00006	+ ·26776
83 L	990	Homalin ...	24 51 50	94 54 30	·45230	·37015	+ ·00612	+ ·25986	·45584	·37130	− ·00043	+ ·26444
	991	Paungbyin ...	24 16 0	94 48 20	·44679	·37106	+ ·00662	+ ·24878	·45037	·37244	+ ·00012	+ ·25321
	1187	Tamu ...	24 12 49	94 19 0	·44518	·37113	+ ·00574	+ ·24580	·44887	·37255	− ·00088	+ ·25039
83 M	857	Tālāp ...	27 40 10	95 33 40	·46671	·35738	+ ·00834	+ ·30005	·47045	·35778	+ ·00207	+ ·30547
	856	Mārgheritā ...	27 17 20	95 41 20	·46362	·35918	+ ·00720	+ ·29305	·46718	·35966	+ ·00084	+ ·29817
	855	Sapekhati ...	27 6 41	95 9 41	·46288	·35965	+ ·00794	+ ·29129	·46656	·36020	+ ·00151	+ ·29654
83 P	989	Nananton ...	24 45 30	95 40 30	·45096	·37066	+ ·00538	+ ·25680	·45443	·37186	− ·00111	+ ·26120
	988	Manyu ...	24 19 20	95 33 40	·44866	·37347	+ ·00702	+ ·24854	·45216	·37485	+ ·00048	+ ·25285
84 A	1023	Aijal ...	23 43 28	92 43 10	·44172	·37260	+ ·00646	+ ·23716	·44562	·37414	− ·00024	+ ·24207
	1024	Tenzol ...	23 18 22	92 47 10	·43957	·37363	+ ·00628	+ ·23149	·44342	·37527	− ·00037	+ ·23623
84 B	1025	Lungleh ...	22 53 40	92 44 50	·43806	·37547	+ ·00613	+ ·22556	·44187	·37722	− ·00050	+ ·23012
	1026	Rāngāmāti ...	22 38 10	92 11 50	·43622	·37614	+ ·00626	+ ·22083	·44018	·37800	− ·00038	+ ·22555
	1183	Shilghati ...	22 12 20	92 8 30	·43416	·37721	+ ·00589	+ ·21489	·43809	·37917	− ·00071	+ ·21944
84 C	1110	Chakaria ...	21 46 0	92 5 50	·43186	·37856	+ ·00566	+ ·20775	·43578	·38063	− ·00096	+ ·21220
	1217	Kaletwa ...	21 44 0	92 47 50	·43241	·37945	+ ·00529	+ ·20730	·43626	·38151	− ·00130	+ ·21159
	1216	Paletwa ...	21 18 14	92 51 40	·43024	·38042	+ ·00499	+ ·20090	·43411	·38264	− ·00161	+ ·20504
84 D	1215	Kyauktaw ...	20 50 25	92 58 40	·42795	·38174	+ ·00451	+ ·19336	·43176	·38406	− ·00200	+ ·19724
	1109	Maungdaw ...	20 49 50	92 21 40	·42755	·38128	+ ·00478	+ ·19341	·43147	·38360	− ·00179	+ ·19752
	1108	Rathedaung ...	20 29 10	92 45 10	·42583	·38245	+ ·00451	+ ·18718	·42969	·38488	− ·00202	+ ·19105
	XX	AKYAB ...	20 8 6	92 53 37	·42501	·38343	+ ·00455	+ ·18329	·42889	·38597	− ·00199	+ ·18700
84 E	1188	Lenacot ...	23 54 27	93 47 50	·44321	·37217	+ ·00675	+ ·24059	·44701	·37371	+ ·00011	+ ·24528
	1189	Tunzan ...	23 35 28	93 41 30	·44126	·37298	+ ·00670	+ ·23569	·44496	·37457	+ ·00011	+ ·24018
	1190	Fort White ...	23 14 49	93 46 30	·43928	·37406	+ ·00778	+ ·23019	·44300	·37578	+ ·00118	+ ·23460
84 F	1191	Tao ...	22 45 50	93 11 20	·43741	·37590	+ ·00577	+ ·22359	·44122	·37775	− ·00087	+ ·22802
	1192	Haka ...	22 38 30	93 37 20	·43698	·37624	+ ·00614	+ ·22217	·44071	·37810	− ·00051	+ ·22642
84 H	1098	Kyindwe ...	20 58 10	93 50 10	·42865	·38145	+ ·00558	+ ·19545	·43242	·38380	− ·00092	+ ·19920
	1106	Myohaung ...	20 35 20	93 11 20	·42692	·38230	+ ·00488	+ ·18996	·43068	·38468	− ·00163	+ ·19367
	1107	Myebon ...	20 4 0	93 22 20	·42523	·38422	+ ·00438	+ ·18213	·42903	·38676	− ·00212	+ ·18568
84 I	LXXIX	KINDAT ...	23 44 10	94 26 0	·44389	·37303	+ ·00641	+ ·24052	·44751	·37456	− ·00017	+ ·24487
	993	Kalewa ...	23 11 20	94 18 20	·44139	·37563	+ ·00601	+ ·23171	·44515	·37738	− ·00057	+ ·23609
84 J	1194	Sihaung ...	22 51 0	94 3 20	·43999	·37677	+ ·00525	+ ·22717	·44371	·37856	− ·00135	+ ·23145
	994	Peginma ...	22 43 50	94 42 30	·43879	·37726	+ ·00607	+ ·22400	·44238	·37906	− ·00047	+ ·22808
	1193	Kan ...	22 24 40	94 6 20	·43690	·37776	+ ·00564	+ ·21942	·44058	·37967	− ·00092	+ ·22351
	1086	Thitkyidaing ...	22 1 21	94 32 10	·43431	·37870	+ ·00489	+ ·21258	·43795	·38070	− ·00163	+ ·21649
84 K	1085	Shwekondaung ...	21 49 10	94 6 30	·43377	·37923	+ ·00506	+ ·21052	·43750	·38134	− ·00152	+ ·21446
	1083	Sabē ...	21 27 20	94 35 0	·43299	·38081	+ ·00471	+ ·20602	·43666	·38296	− ·00185	+ ·20978
	1084	Pasōk ...	21 22 56	94 11 0	·43169	·38073	+ ·00492	+ ·20341	·43539	·38290	− ·00164	+ ·20724
	1099	Thōnlanbyi ...	21 4 20	94 16 10	·43021	·38164	+ ·00483	+ ·19853	·43389	·38390	− ·00168	+ ·20219
84 L	1088	Seikpyu ...	20 54 20	94 47 30	·42937	·38238	+ ·00434	+ ·19525	·43303	·38468	− ·00213	+ ·19882
	1097	Tauksok ...	20 43 30	94 8 10	·42830	·38226	+ ·00469	+ ·19313	·43207	·38464	− ·00177	+ ·19680
	1089	Kyaukyē ...	20 34 40	94 48 30	·42819	·38350	+ ·00414	+ ·19041	·43186	·38591	− ·00235	+ ·19383
	1096	Sidoktaya ...	20 25 50	94 14 0	·42710	·38317	+ ·00406	+ ·18865	·43087	·38564	− ·00242	+ ·19216
	1090	Minbu ...	20 10 1	94 53 20	·42626	·38456	+ ·00413	+ ·18383	·42999	·38713	− ·00232	+ ·18711
	1095	Ngape ...	20 4 47	94 28 0	·42612	·38449	+ ·00380	+ ·18365	·42989	·38707	− ·00265	+ ·18701
84 M	971	Kawlin ...	23 47 30	95 41 10	·44575	·37506	+ ·00365	+ ·24086	·44920	·37650	− ·00287	+ ·24499
	987	Yeshin ...	23 43 10	95 7 20	·44459	·37384	+ ·00520	+ ·24057	·44814	·37535	− ·00135	+ ·24483
	970	Kanbalu ...	23 13 10	95 32 40	·44259	·37593	+ ·00558	+ ·23350	·44615	·37762	− ·00089	+ ·23760
84 N	985	Thabeikkyin ...	22 52 50	95 58 20	·44047	·37695	+ ·00576	+ ·22780	·44396	·37869	− ·00073	+ ·23171
	969	Shwebo ...	22 35 0	95 41 50	·43849	·37815	+ ·00541	+ ·22194	·44201	·37999	− ·00109	+ ·22577
	986	Singu or (Ngasingu) ...	22 32 50	95 59 30	·44041	·37883	+ ·00700	+ ·22450	·44389	·38071	+ ·00054	+ ·22827

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
84 N	968	Pankkan ...	22 14 10	95 52 10	·43640	·37877	+ ·00548	+ ·21668	·43987	·38067	− ·00099	+ ·22040
	963	Alon ...	22 13 30	95 4 50	·43685	·37964	+ ·00604	+ ·21605	·44048	·38165	− ·00049	+ ·21992
84 O	1087	Salingyi ...	21 58 30	95 4 40	·43547	·38250	+ ·00404	+ ·20812	·43908	·38453	− ·00255	+ ·21193
	962	Wunbye ...	21 56 10	95 32 20	·43486	·37974	+ ·00509	+ ·21183	·43843	·38180	− ·00139	+ ·21552
	1081	Myingyan ...	21 28 31	95 23 40	·43269	·38122	+ ·00500	+ ·20461	·43626	·38338	− ·00144	+ ·20820
	1082	Pakokku ...	21 20 0	95 5 30	·43160	·38068	+ ·00267	+ ·20335	·43522	·38285	− ·00378	+ ·20696
	1080	Mahlaing ...	21 5 40	95 36 40	·43070	·38224	+ ·00478	+ ·19842	·43423	·38451	− ·00162	+ ·20176
84 P	1100	Chaunggya ...	20 44 0	95 13 30	·42864	·38240	+ ·00308	+ ·19363	·43225	·38474	− ·00334	+ ·19697
	1101	Myindēgyi ...	20 26 30	95 36 30	·42733	·38395	+ ·00451	+ ·18753	·43086	·38637	− ·00187	+ ·19068
	1102	Taungdwingyi ...	20 0 0	95 32 50	·42577	38511	+ ·00378	+ ·18157	·42939	·38768	− ·00257	+ ·18459
85 E	1218	Kyaukpyu ...	19 25 55	93 33 30	·42231	·38583	+ ·00395	+ ·17163	·42626	·38864	− ·00252	+ ·17505
	1219	Ramree ...	19 5 50	93 52 0	·42135	·38686	+ ·00374	+ ·16691	·42530	·38977	− ·00270	+ ·17017
85 F	1220	Cheduba ...	18 51 11	93 43 30	·42047	38779	+ ·00365	+ ·16249	·42453	·39082	− ·00273	+ ·16575
85 I	1094	Myothit ...	19 45 20	94 38 10	·42397	·38511	+ ·00417	+ ·17725	·42776	·38780	− ·00223	+ ·18051
	1240	Sakaman ...	19 38 54	94 0 10	·42382	·38598	+ ·00419	+ ·17498	·42763	·38869	− ·00228	+ ·17830
	1093	Mindon ...	19 21 10	94 44 10	·42370	·38695	+ ·00357	+ ·17256	·42758	·38981	− ·00287	+ ·17570
	1239	Mai ...	19 17 10	94 8 0	·42220	·38654	+ ·00413	+ ·16980	·42610	·38939	− ·00230	+ ·17299
85 J	1238	Taungup ...	18 51 40	94 14 50	·42065	·38808	+ ·00376	+ ·16225	·42461	·39111	− ·00264	+ ·16528
	1237	Tabi ...	18 38 16	94 40 20	·41983	38850	+ ·00388	+ ·15909	·42386	·39164	− ·00247	+ ·16205
	1221	Sandoway ...	18 27 50	94 22 0	·41880	·38861	+ ·00367	+ ·15610	·42283	·39181	− ·00268	+ ·15898
85 K	1222	Kyeintali ...	17 59 58	94 29 10	·41704	·38948	+ ·00331	+ ·14906	·42110	·39280	− ·00299	+ ·15177
	1223	Gwa ...	17 35 20	94 34 50	·41534	·39022	+ ·00275	+ ·14220	·41941	·39363	− ·00352	+ ·14473
	1224	Bawmi ...	17 18 30	94 34 40	·41433	·39091	+ ·00272	+ ·13732	·41841	·39438	− ·00349	+ ·13968
85 L	1225	Tazin ...	16 54 20	94 23 40	·41282	·39161	+ ·00245	+ ·13058	·41699	·39525	− ·00371	+ ·13286
	LXXI	BASSEIN ...	16 46 20	94 44 30	·41187	·39144	+ ·00262	+ ·12808	·41597	·39508	− ·00348	+ ·13012
	1226	Ngo-Ton-Kaung ...	16 30 20	94 18 0	·41126	·39212	+ ·00213	+ ·12397	·41536	·39576	− ·00404	+ ·12603
	1228	Lebutta ...	16 8 40	94 45 20	·41085	·39332	+ ·00457	+ ·11861	·41490	·39705	− ·00148	+ ·12036
85 M	1091	Sinbaungwe ...	19 43 0	95 9 30	·42423	·38587	+ ·00378	+ ·17623	·42796	·38856	− ·00263	+ ·17932
	1103	Hngetpyawgyin ...	19 34 20	95 39 20	·42396	·38636	+ ·00393	+ ·17450	·42765	·38910	− ·00237	+ ·17744
	1092	Thayetmyo ...	19 19 30	95 11 10	·42284	·38696	+ ·00359	+ ·17042	·42673	·38987	− ·00272	+ ·17348
85 N	1104	Taungle ...	18 53 30	95 40 20	·42083	·38809	+ ·00374	+ ·16272	·42458	·39106	− ·00248	+ ·16534
	LXX	PROME ...	18 49 40	95 13 20	·42078	·38814	+ ·00340	+ ·16242	·42460	·39111	− ·00289	+ ·16527
	1067	Paungdē ...	18 29 50	95 29 50	·41944	·38882	+ ·00355	+ ·15726	·42333	·39196	− ·00268	+ ·15989
	1236	Petye ...	18 18 30	95 8 20	·41802	·38885	+ ·00339	+ ·15336	·42195	·39205	− ·00284	+ ·15599
85 O	1066	Minhla ...	17 58 30	95 42 20	·41715	·38976	+ ·00332	+ ·14861	·42104	·39307	− ·00280	+ ·15086
	1235	Mēzaligōn ...	17 52 50	95 14 0	·41715	·39036	+ ·00329	+ ·14704	·42114	·39372	− ·00290	+ ·14945
	1069	Henzada Shore ...	17 38 30	95 29 10	·41606	·39035	+ ·00379	+ ·14305	·42004	·39377	− ·00227	+ ·14620
	1065	Palōn ...	17 26 20	95 56 0	·41520	·39092	+ ·00325	+ ·13986	·41905	·39434	− ·00270	+ ·14178
	1070	Athōk ...	17 12 13	95 5 2	·41404	·39125	+ ·00351	+ ·13542	·41808	·39479	− ·00257	+ ·13756
	1234	Yandoon ...	17 2 50	95 38 10	·41439	·39200	+ ·00338	+ ·13433	·41843	·39560	− ·00259	+ ·13626
85 P	1231	Ma-ubin ...	16 44 20	95 39 10	·41243	·39176	+ ·00283	+ ·12891	·41643	·39541	− ·00307	+ ·13059
	1229	Wakema ...	16 36 0	95 10 10	·41189	·39210	+ ·00431	+ ·12604	·41593	·39578	− ·00165	+ ·12791
	1232	Pyapon ...	16 17 10	95 40 50	·41110	·39260	+ ·00255	+ ·12192	·41509	·39630	− ·00331	+ ·12341
	1230	Mya-Tha ...	16 14 10	95 17 0	·41007	·39206	+ ·00292	+ ·12019	·41407	·39576	− ·00298	+ ·12174
86 C	1334	Paget Island ...	13 25 50	92 50 0	·40137	·39439	+ ·00024	+ ·07451	·40543	·39827	− ·00601	+ ·07561
86 D	1338	Port Andaman ...	12 48 10	92 40 20	·39941	·39433	− ·00008	+ ·06353	·40353	·39831	− ·00641	+ ·06440
	1332	Port Anson ...	12 18 0	92 43 0	·39844	·39463	− ·00041	+ ·05495	·40256	·39865	− ·00675	+ ·05554
86 I	1227	Ka-Baung-Hmaw ...	15 59 50	94 16 40	·40917	·39279	+ ·00202	+ ·11458	·41328	·39653	− ·00411	+ ·11637
86 M	1233	Kadon-Kani ...	15 46 40	95 12 50	·40924	·39280	+ ·00238	+ ·11480	·41328	·39659	− ·00348	+ ·11619
87 A	XXIII	PORT BLAIR ...	11 39 53	92 42 48	·39822	·39567	− ·00053	+ ·04498	·40229	·39968	− ·00676	+ ·04533
92 C	974	Taungni ...	25 10 20	96 44 20	·45939	·37089	+ ·00323	+ ·27105	·46279	·37178	− ·00969	+ ·27542
92 D	973	Mohnyin ...	24 46 30	96 21 20	·45394	·37216	+ ·00015	+ ·25991	·45732	·37321	− ·00663	+ ·26422
	972	Naba ...	24 15 0	96 11 10	·44834	·37307	+ ·00523	+ ·24861	·45169	·37437	− ·00125	+ ·25272
92 G	LXVIII	MYITKYINA ...	25 23 20	97 24 10	·44827	·36200	+ ·01016	+ ·26419	·45134	·36295	+ ·00394	+ ·26824
92 H	976	Sinbo ...	24 46 40	97 2 50	·45264	·37074	+ ·00892	+ ·25951	·45585	·37189	+ ·00261	+ ·26360
	LXIX	BHAMO ...	24 15 30	97 13 10	·44906	·37344	+ ·00609	+ ·24932	·45219	·37465	− ·00027	+ ·25320
93 A	984	Taganng ...	23 30 11	96 0 50	·44372	·37434	+ ·00652	+ ·23814	·44722	·37594	+ ·00009	+ ·24223
	983	Wainglōn ...	23 27 50	96 36 30	·44214	·37365	+ ·00737	+ ·23626	·44545	·37520	+ ·00100	+ ·24012
93 B	982	Mogok ...	22 56 0	96 31 20	·44108	·37795	+ ·00494	+ ·22734	·44451	·37968	− ·00151	+ ·23115

Note:—Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0 Total Force F cgs	1909·0 Components North X cgs	1909·0 Components E. or W. Y cgs	1909·0 Components Vertical Z cgs	1920·0 Total Force F cgs	1920·0 Components North X cgs	1920·0 Components E. or W. Y cgs	1920·0 Components Vertical Z cgs
			° ′ ″	° ′ ″								
93 B	965	Gokteik Viaduct ...	22 20 10	96 51 30	·43763	·37893	+ ·00450	+ ·21889	·44094	·38076	− ·00185	+ ·22236
	964	Maymyo ...	22 2 20	96 28 0	·43582	·37977	+ ·00493	+ ·21375	·43925	·38177	− ·00143	+ ·21724
	LXVII	MANDALAY ...	22 0 13	96 5 58	·43608	·38050	+ ·00469	+ ·21299	·43956	·38250	− ·00175	+ ·21657
93 C	1157	Kyawkku ...	21 48 20	96 56 10	·43519	·38057	+ ·00463	+ ·21105	·43848	·38256	− ·00169	+ ·21427
	1079	Kyaukse ...	21 36 30	96 8 0	·43226	·37972	+ ·00421	+ ·20651	·43565	·38175	− ·00215	+ ·20989
	1158	Lawk Sawk ...	21 14 40	96 52 30	·43216	·38197	+ ·00463	+ ·20207	·43547	·38413	− ·00165	+ ·20514
	1078	Thēdaw ...	21 5 10	96 3 50	·43107	·38238	+ ·00449	+ ·19898	·43456	·38463	− ·00186	+ ·20224
93 D	LXXVIII	KALAW ...	20 37 40	96 34 10	·42866	·38372	+ ·00472	+ ·19100	·43203	·38604	− ·00159	+ ·19396
	1077	Shweda ...	20 31 10	96 4 50	·42841	·38396	+ ·00513	+ ·18996	·43195	·38640	− ·00119	+ ·19306
	1200	Pinlaung ...	20 7 50	96 46 50	·42593	·38448	+ ·00413	+ ·18324	·42925	·38688	− ·00208	+ ·18595
93 E	978	Sikaw ...	23 50 0	97 4 0	·44475	·37348	+ ·00676	+ ·24141	·44794	·37486	+ ·00039	+ ·24521
	979	Namhkam ...	23 50 0	97 40 10	·44529	·37378	+ ·00489	+ ·24196	·44836	·37509	− ·00143	+ ·24564
	980	Hsenwi (Theinni) ...	23 17 40	97 57 10	·44276	·37561	+ ·00519	+ ·23436	·44580	·37708	− ·00104	+ ·23781
	981	Mān-Ton ...	23 15 0	97 7 0	·44268	·37611	+ ·00476	+ ·23344	·44594	·37767	− ·00160	+ ·23713
93 F	XIX	LASHIO ...	22 56 12	97 44 48	·44106	·37744	+ ·00484	+ ·22813	·44413	·37902	− ·00143	+ ·23150
	967	Manpwe ...	22 50 40	97 35 30	·43948	·37669	+ ·00537	+ ·22633	·44259	·37831	− ·00088	+ ·22972
	966	Hsīpaw ...	22 36 40	97 17 50	·43913	·37803	+ ·00492	+ ·22337	·44233	·37977	− ·00141	+ ·22679
	1156	Man Li ...	22 5 50	97 31 30	·43715	·37991	+ ·00494	+ ·21620	·44033	·38175	− ·00131	+ ·21946
93 G	1155	Nawngla-Yaw ...	21 38 17	97 44 30	·43410	·38099	+ ·00488	+ ·20801	·43723	·38294	− ·00139	+ ·21100
	1154	Wān-Ho-hwe ...	21 9 0	97 34 40	·43159	·38231	+ ·00474	+ ·20022	·43476	·38442	− ·00143	+ ·20307
	1153	Wān Hoko ...	21 0 6	97 57 0	·43139	·38306	+ ·00464	+ ·19834	·43450	·38517	− ·00149	+ ·20108
93 H	1159	Taunggyi ...	20 46 30	97 2 50	·43001	·38353	+ ·00502	+ ·19440	·43333	·38581	− ·00117	+ ·19729
	1149	Mōgnai ...	20 30 17	97 52 0	42864	38425	+ ·00412	+ ·18993	·43172	·38643	− ·00202	+ ·19249
	1201	Loi-put ...	20 17 30	97 18 40	·42744	·38472	+ ·00473	+ ·18623	·43063	·38703	− ·00142	+ ·18882
	1202	Mawkmai ...	20 13 10	97 43 30	·42733	·38492	+ ·00468	+ ·18554	·43045	·38724	− ·00142	+ ·18796
93 J	1135	Mōng Ma ...	22 45 7	98 16 10	·43984	·37749	+ ·00521	+ ·22566	·44278	·37907	− ·00100	+ ·22883
	1136	Mōng Yai ...	22 25 26	98 2 30	43867	·37879	+ ·00516	+ ·22118	·44173	·38053	− ·00107	+ ·22433
	1137	Mōng Awt ...	22 2 16	98 22 30	·43673	·37999	+ ·00512	+ ·21521	·43964	·38172	− ·00101	+ ·21812
93 K	1138	Hsupwo ...	21 49 45	98 50 20	·43528	·38034	+ ·00488	+ ·21163	·43805	·38207	− ·00120	+ ·21426
	1152	Wān Kawng ...	21 23 22	98 22 30	·43356	·38204	+ ·00489	+ ·20492	·43654	·38400	− ·00122	+ ·20763
93 L	1151	Mōngpu ...	20 54 38	98 44 30	·43104	·38322	+ ·00486	+ ·19727	·43390	·38522	− ·00121	+ ·19969
	1150	Kengtawng ...	20 45 8	98 18 10	43021	·38380	+ ·00479	+ ·19432	·43317	·38590	− ·00129	+ ·19678
	1148	Mōngpan ...	20 19 11	98 22 10	·42804	·38474	+ ·00456	+ ·18754	·43100	·38695	− ·00154	+ ·18984
	1146	Mōng Tun ...	20 18 4	98 54 10	·42826	·38506	+ ·00455	+ ·18739	·43111	·38722	− ·00143	+ ·18950
93 O	1141	Mōngsang ...	21 50 38	99 41 30	43537	·38026	+ ·00404	+ ·21199	·43800	·38192	− ·00199	+ ·21443
	1139	Mōng Ping ...	21 21 1	99 1 10	·43378	·38245	+ ·00452	+ ·20465	·43651	·38428	− ·00154	+ ·20704
	1140	Kengtung ...	21 16 56	99 37 0	·43316	·38245	+ ·00453	+ ·20335	·43584	38428	− ·00141	+ ·20565
93 P	1144	Mōng Hai ...	20 46 14	99 48 10	·43061	·38376	+ ·00452	+ ·19528	·43325	·38571	− ·00137	+ ·19733
	1145	Mōng Hsāt ...	20 31 35	99 15 50	·42934	·38449	+ ·00459	+ ·19100	·43207	·38653	− ·00132	+ ·19307
94 A	1076	Pyokkwe ...	19·57 6	96 13 34	·42609	·38511	+ ·00410	+ ·18231	·42958	·38762	− ·00212	+ ·18514
	1198	Thaungbyin ...	19 55 20	96 31 10	42558	·38545	+ ·00440	+ ·18035	·42901	·38799	− ·00183	+ ·18308
	1199	Thitkyit ...	19 37 50	96 40 30	·42476	38639	+ ·00411	+ ·17636	·42820	·38902	− ·00207	+ ·17895
	1075	Myohla ...	19 24 40	96 16 10	42469	·38770	+ ·00444	+ ·17326	·42828	·39046	− ·00176	+ ·17596
94 B		**TOUNGOO OBSY.** ...	18 55 45	96 27 3	·42123	·38771	+ ·00373	+ ·16463	·42511	·39086	− ·00244	+ ·16715
	1074	Nyaungbintha ...	18 24 17	96 27 21	·41845	·38797	+ ·00353	+ ·15672	·42212	39105	− ·00256	+ ·15895
94 C	1073	Pyuntazā ...	17 53 0	96 43 20	·41636	·38910	+ ·00234	+ ·14817	·42005	·39233	− ·00358	+ ·15002
	1072	Pegu ...	17 20 30	96 28 40	·41498	·39113	+ ·00426	+ ·13858	·41871	·39452	− ·00162	+ ·14025
94 D	1105	Thamaing ...	16 51 49	96 6 55	·41310	·39190	+ ·00316	+ ·13060	·41701	·39549	− ·00268	+ ·13221
94 E	1203	Ta-Supteng ...	19 51 20	97 45 10	·42579	·38593	+ ·00417	+ ·17982	·42893	·38835	− ·00195	+ ·18210
	1205	Loikaw ...	19 40 20	97 13 10	·42512	·38638	+ ·00461	+ ·17723	·42845	·38897	− ·00152	+ ·17963
	1204	Namon ...	19 21 42	97 30 50	·42394	·38741	+ ·00449	+ ·17208	·42724	·39006	− ·00159	+ ·17432
	1206	Kreuko ...	19 15 9	97 2 30	·42304	·38703	+ ·00437	+ ·17075	·42642	·38972	− ·00177	+ ·17308
94 F	1207	Pasawng ...	18 52 10	97 18 40	·42160	·38828	+ ·00467	+ ·16420	·42504	·39115	− ·00142	+ ·16631
	1208	Salween ...	18 26 57	97 21 40	·41988	·38936	+ ·00409	+ ·15711	·42334	·39232	− ·00189	+ ·15906
	1209	Papun ...	18 3 22	97 27 20	·41720	·38879	+ ·00454	+ ·15125	·42059	·39182	− ·00131	+ ·15288
94 G	1210	Maipali ...	17 30 45	97 38 40	·41613	·39103	+ ·00386	+ ·14228	·41958	·39422	− ·00196	+ ·14361
	1197	Kyaikto ...	17 18 40	97 1 0	·41623	·39255	+ ·00356	+ ·13832	·41988	·39591	− ·00228	+ ·13983
	1211	Hlaingbwe ...	17 7 0	97 49 10	·41488	·39201	+ ·00403	+ ·13579	·41829	·39527	− ·00168	+ ·13687
94 H	1196	Thaton ...	16 55 8	97 20 20	41361	·39210	+ ·00360	+ ·13158	·41722	·39552	− ·00212	+ ·13276
	LXXII	MOULMEIN ...	16 29 40	97 37 30	41233	·39287	+ ·00346	+ ·12514	·41576	·39623	− ·00206	+ ·12589
	1246	Amherst ...	16 4 50	97 34 0	41084	·39362	+ ·00331	+ ·11761	·41434	·39709	− ·00223	+ ·11827
94 I	1147	Mōnghta ...	19 51 14	98 34 0	·42588	·38605	+ ·00450	+ ·17978	·42882	·38836	− ·00102	+ ·18184

Note:—Y is + or—according as Declination is East or West. Z is + or—according as Dip is towards the North or South.

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The values of the Total Force and its Components reduced to the epochs 1909·0 and 1920·0.

Degree Sheet No.	Station No.	NAME OF STATION	Latitude N	Longitude E	1909·0				1920·0			
					Total Force F	Components North X	E. or W. Y	Vertical Z	Total Force F	Components North X	E. or W. Y	Vertical Z
					cgs	cgs	cgs	cgs	cgs	cgs	cgs	cgs
			° ′ ″	° ′ ″								
94 L	1245	Myawadi ...	16 41 18	98 29 50	·41348	·39292	+ ·00399	+ ·12871	·41661	·39605	− ·00153	+ ·12926
	1244	Kyondo ...	16 35 45	98 3 50	·41303	·39305	+ ·00397	+ ·12684	·41637	·39636	− ·00156	+ ·12751
	1241	Thanba Ya ...	16 7 20	98 2 10	·41145	·39371	+ ·00395	+ ·11946	·41481	·39708	− ·00146	+ ·11995
	1243	Mitan ...	16 0 10	98 26 30	41123	·39393	+ ·00390	+ ·11793	·41440	·39718	− ·00139	+ ·11822
95 E	1247	Anin ...	15 39 40	97 44 0	·40888	·39366	+ ·00298	+ ·11049	·41228	·39706	− ·00244	+ ·11093
	1248	Ye ...	15 14 40	97 51 10	·40866	·39495	+ ·00345	+ ·10488	·41198	·39836	− ·00187	+ ·10505
95 I	1242	Kyunghaung ...	15 32 11	98 15 20	·40953	·39443	+ ·00368	+ ·11013	·41272	·39773	− ·00161	+ ·11024
95 J	1214	Shintali ...	14 29 14	98 10 0	·40621	·39538	+ ·00378	+ ·09307	·40930	·39866	− ·00135	+ ·09270
	1249	Myitta ...	14 10 50	98 29 50	·40528	·39569	+ ·00348	+ ·08758	·40823	·39885	− ·00160	+ ·08700
	XVIII	TAVOY ...	14 5 3	98 12 14	·40546	·39617	+ ·00328	+ ·08626	·40848	·39938	− ·00188	+ ·08575
95 K	1250	Gonnyinseik ...	13 41 20	98 18 50	·40380	·39592	+ ·00314	+ ·07935	·40679	·39911	− ·00194	+ ·07866
	1251	Mali ...	13 6 50	98 19 40	·40417	·39776	+ ·00366	+ ·07157	·40708	·40091	− ·00139	+ ·07061
95 L	1213	Palaw ...	12 58 0	98 44 20	·40276	·39682	+ ·00313	+ ·06889	·40560	·39990	− ·00184	+ ·06776
	1212	Mergui ...	12 26 50	98 38 50	·40082	·39637	+ ·00319	+ ·05951	·40365	·39944	− ·00171	+ ·05819
95 P	1255	Tenasserim ...	12 5 40	99 3 30	·40102	·39737	+ ·00335	+ ·05393	·40368	·40027	− ·00142	+ ·05240
96 I	1252	Kan-Hmaw ...	11 48 20	98 33 20	·39990	·39685	+ ·00244	+ ·04920	·40274	·39990	− ·00241	+ ·04767
	1253	Bokpyin ...	11 16 40	98 49 30	·39947	·39741	+ ·00279	+ ·04033	·40221	·40034	− ·00193	+ ·03860
96 K	LXXX	VICTORIA POINT ...	9 59 30	98 35 20	·39845	·39799	+ ·00227	+ ·01892	·40125	·40089	− ·00226	+ ·01678
102 C	1142	Hsoplamhsaplwe ...	21 23 37	100 14 20	·43380	·38209	+ ·00444	+ ·20535	·43628	·38382	− ·00143	+ ·20743
102 D	1143	Nam-Lang-Paliao ...	20 49 47	100 20 50	·43178	·38434	+ ·00463	+ ·19669	·43426	·38618	− ·00115	+ ·19861

Note :— Y is + or − according as Declination is East or West. Z is + or − according as Dip is towards the North or South.

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Monthly mean values of the magnetic elements at the Dehra Dûn Observatory.

Declination.

Months	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January ...	° ′	+ 2 42·5	+ 2 41·4	+ 2 40·3	+ 2 39·6	+ 2 39·0	+ 2 37·5	+ 2 36·0	+ 2 33·4	+ 2 30·5	+ 2 27·2	+ 2 24·0	+ 2 20·3	+ 2 17·1	+ 2 13·2	+ 2 8·3	+ 2 3·6	+ 1 58·5	+ 1 54·4
February ...		42·4	41·5	40·6	39·5	39·0	37·5	35·8	33·4	30·2	26·9	23·8	20·2	16·9	12·8	7·7	3·3	58·4	53·6
March ...	+ 2 43·9	42·2	41·4	40·3	39·3	39·2	37·0	35·6	33·3	30·3	26·8	23·3	19·9	16·7	12·7	8·0	3·0	58·1	53·6
April ...	43·8	42·3	41·2	40·0	39·4	38·9	37·4	35·0	32·2	30·0	26·6	22·9	19·6	16·4	12·2	7·5	2·5	57·2	53·1
May ...	43·6	41·3	41·0	39·8	39·2	38·5	37·1	34·8	32·2	29·5	26·4	22·6	19·0	15·8	11·8	6·9	2·0	56·7	52·7
June ...	43·0	41·2	40·9	39·5	39·4	38·0	36·4	34·6	31·8	29·3	25·6	22·3	18·8	15·7	10·9	6·5	1·3	56·0	52·2
July ...	43·1	41·0	40·3	39·1	39·0	38·2	36·1	34·7	31·3	29·0	25·7	22·1	18·6	15·3	10·9	6·4	1·0	55·5	51·8
August ...	42·3	41·1	40·0	39·6	39·1	37·9	36·0	34·4	31·4	28·8	25·4	21·8	18·6	15·0	10·6	6·7	0·8	55·2	
September ...	42·4	40·0	40·4	39·5	39·1	37·9	36·8	34·1	31·1	28·4	25·3	21·4	18·5	14·7	10·0	5·7	0·4	55·1	
October ...	42·2	41·0	40·3	39·8	39·0	37·8	36·5	34·6	31·3	28·3	25·1	21·0	17·9	14·5	9·7	5·8	0·3	54·3	
November ...	42·8	41·4	40·5	39·8	38·8	37·6	36·6	34·3	30·9	28·0	25·3	20·8	17·6	13·9	9·0	4·7	+ 1 59·8	54·1	
December ..	42·6	41·7	40·2	39·8	38·8	37·5	36·4	33·2	30·4	27·6	24·4	20·4	17·1	13·5	8·6	4·1	59·2	54·1	

Horizontal Force.

	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.
January ..		·33451	·33387	·33368	·33354	·33320	·33295	·33255	·33242	·33215	·33195	·33174	·33150	·33108	·33071	·33031	·33020	·32981	·32972
February ...		449	390	364	353	306	303	263	239	215	196	176	149	106	080	045	014	985	970
March ...	·33457	449	395	372	356	310	308	254	242	223	194	175	145	105	060	050	013	980	958
April ...	455	438	392	385	362	326	297	273	234	219	190	171	141	101	071	046	008	986	952
May ...	463	444	395	386	362	323	304	267	248	215	189	178	147	106	067	048	014	978	965
June ...	460	447	393	381	358	327	305	272	241	220	195	180	145	094	073	051	018	999	
July ...	461	436	392	382	354	315	301	269	249	216	193	175	141	099	063	049	015	997	
August ..	454	419	395	377	348	319	293	265	234	212	183	165	131	093	058	013	005	973	
September ...	454	409	391	356	345	316	259	250	234	207	183	151	126	086	048	024	·32992	961	
October ...	448	401	389	362	335	310	270	213	218	201	177	148	122	076	043	016	987	961	
November ...	452	372	385	355	340	307	270	232	219	203	175	147	115	065	038	018	993	976	
December ...	452	385	384	348	322	305	259	233	225	193	175	149	114	072	038	015	976	969	

Dip.

January ..		+ 43° 11′·8	+ 43° 17′·8	+ 43° 20′·9	+ 43° 29′·0	+ 43° 34′·1	+ 43° 38′·7	+ 43° 45′·1	+ 43° 52′·0	+ 43° 58′·9	+ 44° 5′·8	+ 44° 12′·8	+ 44° 19′·4	+ 44° 26′·8	+ 44° 34′·1	+ 44° 42′·5	+ 44° 46′·2	+ 44° 53′·0	+ 44° 57′·6
February ...		12·8	17·3	21·2	30·0	35·8	39·5	45·7	52·2	59·8	6·2	14·2	19·9	27·6	34·7	42·1	47·2	52·6	57·9
March ...		11·5	16·2	22·4	28·9	33·7	40·1	45·9	52·4	59·7	7·0	14·8	20·4	28·2	36·3	42·1	48·1	53·5	59·0
April ...		13·1	17·2	21·9	28·6	33·9	41·6	45·4	53·1	+ 44 0·7	7·3	15·6	21·7	28·8	36·2	42·3	48·4	53·2	59·6
May ...		12·7	17·2	23·3	29·8	35·3	41·8	46·3	53·5	1·4	7·9	16·1	22·0	29·3	36·9	42·8	47·8	54·4	59·2
June ...		14·0	17·6	23·6	28·8	35·6	42·5	46·6	54·3	2·0	7·9	16·2	22·6	30·4	37·0	43·0	48·8	53·3	59·1
July ..		14·2	18·2	24·0	30·7	36·4	42·1	46·7	54·8	2·4	8·8	16·6	23·2	30·9	38·0	44·0	49·5	54·0	59·5
August ...		15·3	18·0	26·5	31·1	36·4	42·8	46·8	55·6	2·9	9·7	17·2	24·1	31·6	38·5	46·2	50·6	55·7	
September ...		15·8	18·4	27·7	32·2	37·1	44·1	51·2	56·0	2·7	10·7	17·8	25·0	32·1	39·4	45·6	51·6	56·4	
October ..		16·6	19·8	27·8	31·4	38·0	44·3	52·3	57·7	3·9	11·4	18·4	25·2	33·1	40·3	45·8	51·9	57·7	
November ...		19·3	20·8	30·6	33·5	37·9	45·0	51·5	58·1	4·6	12·1	18·3	25·7	34·4	41·1	45·8	52·3	56·9	
December ..		18·8	20·7	29·5	33·7	38·7	44·3	51·9	58·1	5·3	12·6	18·8	26·0	34·4	41·3	46·4	53·2	57·4	

Note—The values of Declination and Horizontal Force are in terms of the standard magnetometer No. 17 at the Dehra Dûn Observatory.

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Monthly mean values of the magnetic elements at the Toungoo Observatory.

Declination.

Months	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January ...				+ 0° 51′·5	+ 0° 45′·8	+ 0° 42′·0	+ 0° 37′·3	+ 0° 32′·8	+ 0° 27′·9	+ 0° 22′·4	+ 0° 16′·7	+ 0° 10′·7	+ 0° 5′·6	+ 0° 0′·1	− 0° 5′·7	− 0° 10′·5	− 0° 14′·1	− 0° 18′·4	− 0° 21′·7
February ...				51·2	46·0	41·5	36·8	32·5	27·5	21·9	16·2	10·3	5·0	− 0′·4	6·0	10·7	14·7	18·3	22·8
March ...				50·7	45·7	41·0	36·4	32·1	27·2	21·7	15·7	9·8	4·7	0′·7	6·3	11·0	14·8	18·5	22·1
April ...				50·0	45·0	40·5	36·0	31·7	26·5	21·3	15·1	9·3	4·2	1·0	6·9	11·5	15·4	19·0	22·4
May ...				49·7	45·0	40·0	36·1	31·1	26·2	20·6	14·7	8·8	3·8	1·5	7·4	12·0	15·4	19·3	22·9
June ...				49·1	44·3	39·9	35·1	31·0	25·9	20·3	14·5	8·6	3·5	1·8	7·6	12·1	15·9	19·2	22·8
July ...				48·7	44·1	39·3	34·8	30·4	25·4	19·6	13·9	8·1	3·1	2·4	8·2	12·4	16·2	19·5	23·0
August ...				48·2	43·6	39·5	34·2	29·9	24·7	19·1	13·3	7·5	2·6	3·3	8·4	12·4	16·3	19·9	...
September ...				47·8	43·2	38·8	34·2	29·4	24·2	18·7	12·7	7·5	2·1	3·9	8·9	12·9	16·7	20·5	...
October ...				47·5	42·8	38·7	33·6	29·2	24·0	18·2	12·3	7·0	1·7	4·5	9·1	13·1	16·8	20·7	...
November ...				47·0	42·3	38·5	33·2	28·7	23·5	17·6	11·9	6·5	1·3	4·8	9·7	13·3	17·2	20·9	...
December ...				46·6	42·2	38·0	33·4	28·1	22·9	17·1	11·3	6·3	0·7	5·4	9·9	13·8	17·8	21·4	...

Horizontal Force.

				C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.
January ...					·38682	·38705	·38755	·38773	·38820	·38849	·38884	·38928	·38953	·38959	·38987	·39015	·39061	·39055	·39087
February ...					681	696	778	785	818	854	892	933	952	958	999	027	058	061	089
March ...					691	714	788	778	826	863	899	935	954	964	986	033	055	059	084
April ...					700	728	773	800	811	861	898	928	950	969	·39002	036	051	064	083
May ...					709	727	785	798	819	862	908	939	962	976	003	042	052	057	094
June ...					702	732	788	802	821	870	920	946	962	967	014	052	051	085	
July ...					694	721	792	804	833	871	921	949	959	969	004	050	052	083	
August ...					703	735	783	805	834	874	912	947	954	971	005	025	045	060	
September ..					703	738	754	794	835	872	913	942	952	971	000	045	037	055	
October ...					696	752	775	767	827	879	918	942	955	968	000	044	042	058	
November ...					712	754	776	804	838	879	914	951	957	960	003	049	048	077	
December ...				·38658	703	761	774	804	850	880	918	956	963	978	013	046	042	078	

Dip.

January ...					+ 22° 59′·8	+ 22° 59′·4	+ 23° 1′·1	+ 23° 1′·0	+ 23° 1′·6	+ 23° 2′·4	+ 23° 2′·5	+ 23° 5′·1	+ 23° 5′·7	+ 23° 6′·7	+ 23° 7′·3	+ 23° 9′·0	+ 23° 8′·1	+ 23° 8′·5	+ 23° 7′·7
February .					+ 23 0·9	+ 23 3·5	0·8	0·5	2·0	2·5	2·9	4·4	5·8	6·8	7·7	8·6	8·4	8·1	7·8
March ...					+ 22 59·8	2·1	1·4	1·2	1·8	2·6	2·8	4·5	5·1	6·9	8·6	8·3	8·7	8·3	7·7
April ...				+ 23 1·2	+ 23 0·0	1·5	3·1	0·6	2·6	2·7	2·8	4·8	6·0	7·0	8·3	8·4	8·5	8·4	8·2
May ...				+ 22 59·6	0·2	2·1	1·9	1·4	2·4	3·0	2·8	5·0	5·9	6·8	8·6	9·2	8·6	8·6	7·7
June ...				59·2	0·2	1·2	1·8	1·7	2·0	3·3	2·7	5·0	5·7	7·7	8·5	8·1	8·3	7·5	7·7
July ...				59·7	+ 22 59·9	1·8	1·7	1·0	2·1	3·2	3·2	4·9	5·8	7·2	9·0	8·0	8·2	7·8	7·8
August ...				+ 23 0·4	+ 23 0·5	2·0	1·5	1·4	2·3	3·0	2·6	5·1	6·1	7·2	9·0	8·9	8·4	8·9	...
September .				0·3	0·2	1·5	2·2	1·9	2·1	2·7	2·6	5·0	6·1	7·1	9·2	8·2	8·5	8·7	..
October ...				+ 22 58·4	0·4	1·2	2·7	3·0	...	3·8	2·7	5·4	6·7	7·6	8·6	8·3	8·5	8·8	...
November ...				59·7	0·2	2·0	3·2	1·7	...	3·7	4·2	5·3	7·0	8·1	8·7	8·2	8·2	8·0	...
December ...				59·9	0·1	1·8	1·4	2·2	...	2·9	5·1	5·1	6·7	7·7	8·8	8·4	8·7	8·0	...

Note—The values of Declination and Horizontal Force are in terms of the standard magnetometer No. 17 at the Dehra Dūn Observatory.

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Monthly mean values of the magnetic elements at the Kodaikānal Observatory.

Declination.

Months	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January ...	° ′	° ′	− 0 25·0	− 0 30·0	− 0 34·1	− 0 38·7	− 0 43·0	− 0 47·8	− 0 52·4	− 0 58·0	− 1 3·2	− 1 8·6	− 1 14·4	− 1 19·7	− 1 25·4	− 1 31·3	− 1 36·7	− 1 41·6	− 1 47·4
February ...			25·5	30·0	34·4	38·9	43·7	48·1	52·9	57·8	3·7	9·1	14·8	20·2	25 5	31·7	36·9	42·1	47·8
March ...			25·1	30·4	34·7	39·1	44·4	48·4	53·2	58·1	4·3	9·6	15·1	20·5	...	32·1	37·3	42·7	47·9
April ...			25·9	30·9	35·3	39·6	44·0	49·2	54·1	58·7	4·5	9·9	15·6	20·9	26·3	32·5	38·2	43·4	48·5
May ...			26·5	31·2	35·9	39·9	44 6	49·7	54·6	59·3	5·1	10·5	16 2	21·5	26·8	32·9	38·3	43·6	48·9
June ...			26·8	31·9	36·2	40·4	45·3	50·0	54·9	− 1 0·1	5·5	10·9	16·6	22·1	27·1	33 3	39·0	44·2	49·7
July ...			27·4	32·3	36·2	40·6	45·3	50·2	55·2	0·1	5·9	11·3	17·0	22·5	27 4	33·7	39 2	44·0	50·5
August ...	− 0 17·0	− 0 22·3	27·8	32·4	36·6	41·0	46·0	50·6	55·6	0·6	6·3	11·8	17·4	22·9	28·3	34·5	39·7	44·7	
September .	17·4	22·9	28·5	32·7	37·0	41·6	46·1	50·8	55·8	1·4	6·8	12·3	18·2	23·3	28·8	35·0	40·2	46·1	
October ...	18·2	23·4	28·6	33·0	37·3	41·8	46·5	51·2	56·1	1·9	7·3	12·8	19·2	23·7	29·4	35·3	40 8	46·3	
November ...	18·6	23·5	29·2	33·7	38·0	42·3	46·9	51·6	57·1	2·4	7·7	13·2	19·7	24·1	29·8	35·9	41·4	46·6	
December ...	18·6	24·3	29·4	33·9	38·2	42·6	47·3	52·0	57·3	2·8	8·3	13·7	20·1	24·9	30·5	35·9	41·3	47·3	

Horizontal Force.

	C.G.S.	C.G.S.	C.G.S.	C.G.S	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C G S.	C.G.S.	C G S.	C.G.S.	C G S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.
January ...		·37394	·37371	·37392	·37422	·37430	·37438	·37445	·37466	·37488	·37512	·37559	·37579	·37605	·37623	·37644	·37693	·37722	·37763
February ...		392	379	390	423	414	450	449	454	484	513	562	58(	608	631	660	688	728	766
March ...		404	389	398	430	428	451	449	465	500	521	561	587	611	620	669	694	724	752
April ...		399	385	405	431	439	442	464	457	496	519	564	586	616	634	668	697	738	751
May ...		399	389	410	431	431	447	458	467	497	523	568	591	617	632	673	704	733	765
June ...		390	394	400	422	436	444	457	468	500	531	573	588	609	641	676	707	756	
July ...		382	398	402	416	427	450	455	468	504	537	571	588	609	634	677	710	756	
August ...	·37389	391	411	401	422	434	445	463	470	505	540	576	586	619	635	663	709	738	
September ...	393	384	400	400	426	442	429	454	477	509	548	572	594	622	641	685	707	741	
October ..	397	381	402	411	421	439	446	426	462	510	552	572	595	619	648	683	706	747	
November ...	394	348	398	410	430	437	441	449	476	513	549	574	595	608	649	684	714	763	
December ...	395	358	401	406	423	442	441	451	495	509	552	573	610	619	649	682	709	759	

Dip.

	° ′	+ 3 4·1	+ 3 9·1	+ 3 13·2	+ 3 17·9	+ 3 25·8	+ 3 30·5	+ 3 36·1	+ 3 41·8	+ 3 48·8	+ 3 56·1	+ 4 2·2	+ 4 8·2	+ 4 13·7	+ 4 19·0	+ 4 26·3	+ 4 28·9	+ 4 31·5	+ 4 34·4
January ...		4·2	10·1	14·4	20·1	27·2	31·0	36·9	43·1	49·6	56·8	2·5	8·5	15·0	20·4	26·9	29·5	31·8	34·7
February ...		3·2	10·0	16·2	18·5	24·8	31·1	36·8	43·4	50·0	57·0	3·3	9·1	15·8	20·6	27·6	29·6	32·1	35·6
March ...		4·2	10·3	16·0	20·1	26·7	31·7	38·3	43·7	50·7	57·8	4·2	9·8	15·9	21·0	25·2	29·6	32·7	36·2
April ...		4·2	11·1	17·0	21·8	26·3	31·9	38·5	44·1	51·0	58·5	4·8	10·5	16·7	21·7	25·4	30·2	32·9	36·6
May ...		4·8	12·2	17·9	21·5	27·7	34·0	39·0	45·2	52·0	59·3	5·7	11·7	17·2	22·4	25·7	30·6	33·5	36·1
June ...		7·3	12·9	18·7	22·5	27·9	33·9	39·9	45·9	52·2	59·8	6·1	12·0	17·9	22·9	28·0	30·5	34·2	36·3
July ..		6·5	13·4	18·9	22·4	28·3	34·2	39·9	46·4	52·7	59·9	6·5	12·5	17·2	23·5	28·4	31·0	35·5	
August ..		7·9	12·6	18 9	22·4	27·4	34·3	40·1	46·7	52·9	+ 4 0·1	6·8	12·5	17·9	23·3	28·6	30·5	33·8	
September ...	+ 3 1·0	2·0	7·6	12·3	18·9	23·0	27·7	34·0	40·3	47·2	54·2	0·6	7·6	12·7	18·1	23·8	27·2	30·4	34·4
October ...	2·0	3·0	8·6	13·2	19·2	25·2	29·4	35·1	41·5	47·6	54·8	1·4	7·7	13·7	19·2	24·6	27·6	31·2	34·7
November ..	3·0	3·2	9·3	13·9	19·2	26·5	29·7	36·3	42·1	47·8	55·2	2·0	8·0	13·5	19·1	25·1	28·0	31·5	35·1
December ...	3·2																		

Note—The values of Declination and Horizontal Force are in terms of the standard Magnetometer No. 17 at the Dehra Dūn Observatory.

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Monthly mean values of the magnetic elements at the Barrackpore Observatory.

Declination.

Months	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January ...		° ′	+ 1 23·6	+ 1 19·3	+ 1 14·7	+ 1 11·1	+ 1 6·8	+ 1 2·1	+ 0 57·3	+ 0 51·5	+ 0 46·0	+ 0 39·8	+ 0 33·8	+ 0 28·2					
February ...			23·2	19·0	14·7	10·3	6·4	1·7	56·8	51·2	45·5	39·5	33·3	27·8					
March ...			23·0	18·6	14·4	10·4	5·8	1·4	56·6	50·9	45·0	39·0	33·0	27·5					
April ...			22·5	18·1	14·1	10·0	5·9	0·8	55 8	50·4	44·3	38·5	32·6	26·9					
May ...			22·2	17·5	13·5	9·5	5·7	0·3	55 3	49·9	43·8	38·0	32·0						
June ...			21·9	16·9	13·5	9·0	4·9	0·1	55·0	49·2	43·4	37·5	31·6						
July ...			21·3	16·9	13·5	8·8	4·8	+ 0 59·8	54·4	48·9	42·9	36 9	31·2						
August ...		+ 1 25·6	21·2	16·4	13·1	8·6	4·3	59·4	53·7	48·6	42·5	36·4	30·7						
September ...		25·2	20·5	16·3	12·9	8·3	4·1	59·0	53·4	48·1	41·9	36 0	30·3						
October ...		25·0	20·2	16·0	12·0	7·8	3·5	58·9	53·2	47·4	41·4	35·4	29·9						
November ...		24·8	19·9	15·6	11·8	7·5	3·2	58·4	52·7	47·0	41·0	35·1	29·4						
December ...		24·3	19·4	15·3	11·5	7·2	3·0	57·4	52·0	46·5	40·4	34·7	28·8						

Horizontal Force.

		C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.					
January ...			·37225	·37249	·37273	·37286	·37299	·37309	·37337	·37350	·37375	·37388	·37404	·37406					
February ...			232	248	280	277	310	321	337	350	376	392	409	405					
March ...			248	256	288	290	314	316	342	362	385	394	407	405					
April ...			241	268	293	303	303	340	336	359	387	384	403	411					
May ...			242	267	297	298	311	337	348	359	394	388	418						
June ...			247	263	296	299	309	342	348	365	395	388	423						
July ...			250	270	294	289	311	342	354	360	402	384	413						
August ...		·37239	255	269	294	304	303	339	354	357	386	386	408						
September ...		231	251	264	302	303	277	328	359	353	393	377	407						
October ...		225	252	273	295	298	296	294	345	353	395	380	409						
November ...		200	256	273	295	300	300	321	349	362	388	395	411						
December ...		214	256	264	282	300	306	315	355	366	395	400	415						

Dip.

		°																	
January ...			+ 30° 15′6	+ 30° 20′1	+ 30° 23′9	+ 30° 27′6	+ 30° 32′0	+ 30° 36′5	+ 30° 40′3	+ 30° 43′1	+ 30° 48′8	+ 30° 52′9	+ 30° 56′8	+ 31° 1′3					
February ...			16·4	19·1	23·0	30·5	33·0	36·6	40·9	43·5	49·2	53·3	57·2	1·7					
March ...			15·8	18·8	24·8	28·3	32·9	37·5	40·8	44·0	49·3	53·5	57·4	2·0					
April ...			18·0	19·7	24·5	28·7	34 6	37·0	41·1	44·5	50·1	54·1	58·0	2·2					
May ...			19·1	19·6	23·1	29·8	34·2	37·6	41·9	44·4	50·4	54·3	58·1						
June ...			19·0	20·5	24·0	29·8	34·5	38·1	42·1	45·1	50·6	54·5	58·7						
July ...			18·0	20·9	24·7	30·6	34·3	38·7	42·0	45·5	50·9	55·0	59·1						
August ...		+ 30 15·0	18·2	20·0	25·6	30·8	35·1	39·1	42·9	46·2	51·3	55·1	59·6						
September ...		15·1	18·1	22·5	25·3	31·0	36·1	40·4	43·0	47·0	51·8	55·7	+ 31 0·2						
October ...		15·2	18·5	22·4	26·5	31·8	35·8	42·0	43·6	47·4	51·8	56·0	0·3						
November ...		17·0	19·2	24 0	25·7	31 8	36·4	40·3	44·1	47·4	52·4	56·0	1·0						
December ...		18·0	19·0	23·1	26·8	32·1	36·3	40·8	43·5	47·6	52·5	56·7	0·8						

Note—The values of Declination and Horizontal Force are in terms of the standard magnetometer No. 17 at the Dehra Dūn Observatory.

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Monthly mean values of the magnetic elements at the Alibāg Observatory.

Declination.

Months	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January ...	+ 1° 15′·4	+ 1° 13′·3	+ 1° 11′·6	+ 1° 9′·2	+ 1° 6′·9	+ 1° 5′·5	+ 1° 3′·5	+ 1° 2′·3	+ 1° 0′·1	+ 0° 57′·7	+ 0° 55′·2	+ 0° 51′·9	+ 0° 48′·1	+ 0° 44′·8	+ 0° 41′·2	+ 0° 37′·6	+ 0° 33′·6	+ 0° 28′·8	+ 0° 25′·4	+ 0° 21′·2
February ...	15·4	13·2	10·7	8·9	6·6	5·4	3·4	1·8	+ 0 59·9	57·6	55·0	51·5	47·8	44·4	41·0	37·2	33·2	28·9	24·9	20·7
March ...	14·8	13·0	11·0	9·2	6·7	5·1	3·5	1·7	+ 1 0·2	57·5	54·8	51·1	47·5	44·3	40·7	37·0	33·3	29·4	25·1	20·9
April ...	14·9	12·7	10·4	8·6	6·9	4·8	2·7	1·9	+ 0 59·6	57·2	54·3	51·1	47·5	44·0	40·5	37·1	32·5	28·8	24·4	20·6
May ...	14·7	12·4	9·7	8·1	6·7	4·5	3·1	1·6	59·2	56·7	54·2	50·7	47·1	44·0	40·3	36·4	32·0	27·7	24·2	20·1
June ...	14·5	11·9	9·7	8·2	7·0	4·3	2·5	0·8	58·9	56·8	53·6	50·2	47·0	43·4	39·8	35·5	31·6	27·5	23·6	19·4
July ...	14·4	11·9	10·2	8·1	6·1	4·2	2·6	0·5	58·8	56·5	53·6	50·0	46·2	43·2	39·6	35·7	31·4	27·0	23·2	18·8
August ...	14·1	11·5	10·1	7·9	6·5	4·2	2·4	0·5	59·0	56·3	53·1	49·7	46·0	42·9	39·2	35·4	31·2	26·7	22·9	
September ...	13·9	11·4	9·6	7·3	6·6	4·2	2·2	0·9	59·0	55·8	52·9	49·5	45·5	42·5	38·9	34·8	30·7	26·5	22·8	
October ...	13·8	11·2	9·8	7·0	6·4	3·8	2·2	0·6	59·0	56·0	52·7	49·2	45·6	42·1	38·7	34·7	30·1	26·2	22·2	
November ...	13·9	10·8	9·5	6·8	5·8	3·5	2·1	0·7	58·5	55·6	52·3	48·8	45·4	41·8	38·3	34·2	29·3	25·9	21·6	
December ...	13·6	10·5	9·2	7·2	6·2	3·7	2·1	0·7	58·1	55·2	52·2	48·5	45·0	41·8	37·8	34·0	29·3	25·6	21·5	

Horizontal Force.

January ...	C.G.S. ·36838	C.G.S ·36844	C.G.S. ·36788	C.G.S. ·36798	C.G S. ·36805	C.G.S. ·36799	C.G.S. ·36787	C.G.S. ·36774	C.G.S. ·36782	C.G.S. ·36801	C.G.S. ·36816	C.G.S. ·36822	C.G.S. ·36835	C.G.S. ·36831	C.G.S. ·36829	C.G.S. ·36811	C.G.S. ·36848	C.G.S ·36838	C.G.S ·36879
February ...	847	840	792	798	808	789	801	782	778	799	815	822	834	827	838	830	841	843	880
March ...	840	844	802	809	811	798	805	785	788	809	820	823	831	833	817	836	837	837	856
April ...	839	833	790	805	816	810	791	805	784	810	816	822	832	836	826	839	836	856	866
May ...	845	840	793	813	820	802	799	801	790	810	819	830	845	841	829	843	838	848	884
June ...	840	834	797	810	816	808	802	803	797	815	828	839	844	829	840	849	851	879	
July ...	851	825	798	814	809	796	803	796	808	813	825	833	838	829	830	848	856	881	
August ...	855	824	808	811	808	798	789	783	796	814	814	836	830	827	818	818	841	856	
September ...	849	811	797	799	811	802	765	773	797	810	819	826	829	825	818	839	831	851	
October ...	852	802	794	805	807	793	784	744	794	813	824	830	833	823	822	836	831	850	
November ...	840	...	794	802	813	794	781	778	797	819	821	836	833	819	823	843	838	873	
December ...	846	·36781	805	797	802	797	777	775	808	813	823	834	838	829	825	835	824	873	

Dip.

January ...	+ 22° 38′·1	+ 22° 45′·4	+ 22° 52′·8	+ 22° 58′·2	+ 23° 5′·5	+ 23° 11′·9	+ 23° 18′·1	+ 23° 27′·2	+ 23° 35′·7	+ 23° 43′·8	+ 23° 52′·0	+ 24° 0′·7	+ 24° 8′·3	+ 24° 17′·7	+ 24° 25′·5	+ 24° 33′·8	+ 24° 39′·7	+ 24° 46′·6	+ 24° 52′·1
February ...	38·5	45·0	53·4	+ 23 0·0	6·7	13·2	19·0	27·4	35·5	45·4	53·0	1·3	8·9	18·2	25·7	33·3	40·2	47·0	52·7
March ...	38·4	46·0	52·7	+ 22 59·7	6·8	13·0	20·7	27·2	37·0	45·4	53·9	2·3	10·3	18·6	27·3	33·4	39·9	48·0	54·2
April ...	38·6	45·4	52·0	58·7	7·2	14·2	20·7	29·5	38·1	45·5	54·5	3·1	11·0	19·1	27·3	34·1	40·9	47·7	54·1
May ...	39·6	45·7	52·2	59·5	8·2	14·9	20·7	30·6	38·5	45·8	55·4	3·8	12·0	19·1	28·5	34·7	42·4	49·0	54·5
June ...	39·3	46·7	52·9	+ 23 0·9	8·1	14·9	21·2	30·0	38·5	47·6	55·1	4·5	12·3	21·0	28·4	35·2	42·8	48·5	54·2
July ...	40·7	48·4	53·7	4·2	8·7	15·8	21·4	31·1	39·7	49·0	56·2	4·9	12·6	21·6	29·6	36·4	43·3	49·2	55·0
August ...	42·9	50·1	53·2	4·0	10·0	15·4	22·9	31·5	41·3	48·3	57·0	5·0	13·1	21·9	30·0	37·6	44·3	50·3	
September ...	42·2	50·0	53·5	5·2	10·0	16·8	24·6	34·4	41·7	49·9	57·9	5·5	14·6	23·0	30·9	37·4	44·5	50·7	
October ...	42·9	50·1	54·6	4·0	10·2	18·0	24·2	34·1	42·6	48·7	58·6	5·5	15·3	24·1	31·4	37·2	45·1	51·4	
November ...	44·6	52·3	56·4	4·6	10·8	18·1	23·9	33·9	43 0	50·1	59·5	5·5	16·1	24·3	32·2	37·5	46·5	51·0	
December ...	44·2	52·3	57·4	5·7	11·4	19·7	24·5	34·9	43·6	51·5	59·7	7·8	16·5	25·1	32·6	38·7	46·7	52·7	

Note :—The values of Declination and Horizontal Force are in terms of the Dehra Dūn standard Magnetometer No. 17.

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Monthly normal values of the Magnetic elements at the Dehra Dūn Observatory, deduced from charts 1a to 3c.

Declination.

Months		1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
		+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′
January	1st	2 43·1	2 42·2	2 41·2	2 40·3	2 39·3	2 38·4	2 37·4	2 36·5	2 33·4	2 30·2	2 27·1	2 23·3	2 20·8	2 17·6	2 13·0	2 8·4	2 3·8	1 59·1	1 54·5
February	,,	43·0	42·1	41·1	40·2	39·3	38·3	37·4	36·2	33·1	29·9	26·8	23·6	20·5	17·2	12·6	8·0	3·4	58·7	54·1
March	,,	42·9	42·0	41·1	40·1	39·2	38·2	37·3	36·0	32·8	29·7	26·5	23·4	20·2	16·8	12·2	7·6	3·0	58·4	53·7
April	,,	42·9	41·9	41·0	40·0	39·1	38·2	37·2	35·7	32·6	29·4	26·3	23·1	20·0	16·5	11·8	7·2	2·6	58·0	53·4
May	,,	42·8	41·8	40·9	40·0	39·0	38·1	37·1	35·5	32·3	29·2	26·0	22·9	19·7	16·1	11·4	6·8	2·2	57·6	53·0
June	,,	42·7	41·8	40·8	39·9	38·9	38·0	37·1	35·2	32·0	28·9	25·7	22·6	19·4	15·7	11·1	6·4	1·8	57·2	52·6
July	,,	42·6	41·7	40·8	39·8	38·9	37·9	37·0	34·9	31·8	28·6	25·5	22·3	19·2	15·3	10·7	6·1	1·4	56·8	52·2
August	,,	42·6	41·6	40·7	39·7	38·8	37·8	36·9	34·7	31·5	28·4	25·2	22·1	18·9	14·9	10·3	5·7	1·1	56·4	
September	,,	42·5	41·5	40·6	39·6	38·7	37·8	36·8	34·4	31·3	28·1	25·0	21·8	18·7	14·5	9·9	5·3	0·7	56·1	
October	,,	42·4	41·5	40·5	39·6	38·6	37·7	36·7	34·1	31·0	27·8	24·7	21·5	18·4	14·1	9·5	4·9	0·3	55·7	
November	,,	42·3	41·4	40·4	39·5	38·5	37·6	36·7	33·9	30·7	27·6	24·4	21·3	18·1	13·8	9·1	4·5	+ 1 59·9	55·3	
December	,,	42·2	41·3	40·4	39·2	38·5	37·5	36·6	33·6	30·5	27·3	24·2	21·0	17·9	13·4	8·8	4·1	59·5	54·9	

Horizontal Force.

		C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.
January	1st	·33461	·33436	·33410	·33384	·33358	·33332	·33306	·33280	·33252	·33225	·33197	·33169	·33141	·33114	·33082	·33050	·33018	·32986	·32954
February	,,	459	433	407	382	356	330	304	278	250	222	195	167	139	111	079	047	015	983	951
March	,,	457	431	405	379	353	328	302	275	248	220	192	164	137	109	077	045	013	980	948
April	,,	455	429	403	377	351	325	299	273	245	218	190	162	134	106	074	042	010	978	946
May	,,	453	427	401	375	349	323	297	271	243	215	188	160	132	103	071	039	007	975	943
June	,,	451	425	399	373	347	321	295	268	241	213	185	158	130	101	069	037	005	972	940
July	,,	448	423	397	371	345	319	293	266	238	211	183	155	128	098	066	034	002	970	
August	,,	446	420	394	369	343	317	291	264	236	208	181	153	125	095	063	031	·32999	967	
September	,,	444	418	392	366	340	315	289	262	234	206	178	151	123	093	061	029	997	964	
October	,,	442	416	390	364	338	312	286	259	231	204	176	148	121	090	058	026	994	962	
November	,,	440	414	388	362	336	310	284	257	229	201	174	146	118	087	055	023	991	959	
December	,,	438	412	386	360	334	308	282	255	227	199	171	144	116	085	053	021	989	956	

Dip.

		+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′	+ ° ′
January	1st	43 11·6	43 17·0	43 22·5	43 27·9	43 33·3	43 38·7	43 44·1	43 51·3	43 58·5	44 5·7	44 12·9	44 20·0	44 27·2	44 33·6	44 40·0	44 46·4	44 52·7	44 59·1	
February	,,	12·1	17·5	22·9	28·3	33·7	39·1	44·7	51·9	59·1	6·3	13·5	20·6	27·7	34·1	40·5	46·9	53·3	59·7	
March	,,	12·5	17·9	23·4	28·8	34·2	39·6	45·3	52·5	59·7	6·9	14·1	21·2	28·3	34·6	41·0	47·4	53·8	44 0·2	
April	,,	13·0	18·4	23·8	29·2	34·6	40·0	45·9	53·1	44 0·3	7·5	14·6	21·8	28·8	35·2	41·6	47·9	54·3	0·7	
May	,,	13·4	18·8	24·3	29·7	35·1	40·5	46·5	53·7	0·9	8·1	15·2	22·4	29·3	35·7	42·1	48·5	54·9	1·2	
June	,,	13·9	19·3	24·7	30·1	35·5	40·9	47·1	54·3	1·5	8·7	15·8	23·0	29·9	36·2	42·6	49·0	55·4	1·8	
July	,,	14·3	19·7	25·2	30·6	36·0	41·4	47·7	54·9	2·1	9·3	16·4	23·6	30·4	36·8	43·2	49·5	55·9	1·3	
August	,,	14·8	20·2	25·6	31·0	36·4	41·8	48·3	55·5	2·7	9·9	17·0	24·2	30·9	37·3	43·7	50·1	56·5		
September	,,	15·2	20·6	26·1	31·5	36·9	42·3	48·9	56·1	3·3	10·5	17·6	24·8	31·5	37·8	44·2	50·6	57·0		
October	,,	15·7	21·1	26·5	31·9	37·4	42·7	49·5	56·7	3·9	11·1	18·2	25·4	32·0	38·4	44·8	51·1	57·5		
November	,,	16·1	21·5	27·0	32·4	37·8	43·2	50·1	57·3	4·5	11·7	18·8	26·0	32·5	38·9	45·3	51·7	58·1		
December	,,	16·6	22·0	27·4	32·8	38·2	43·6	50·7	57·9	5·1	12·3	19·4	26·6	33·1	39·4	45·8	52·2	58·6		

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Monthly normal values of the magnetic elements at the Toungoo Observatory, deduced from charts 1a to 8c.

Declination.

Months	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January 1st				+ 0° 50′·9	+ 0° 46′·5	+ 0° 42′·0	+ 0° 37′·6	+ 0° 33′·1	+ 0° 27′·7	+ 0° 22′·3	+ 0° 16′·8	+ 0° 11′·4	+ 0° 6′·0	+ 0° 0′·6	− 0° 4′·9	− 0° 10′·3	− 0° 14′·0	− 0° 17′·8	− 0° 21′·5
February ,,				50·5	46·1	41·6	37·2	32·7	27·2	21·8	16·4	11·0	5·5	0·1	5·3	10·6	14·4	18·1	21·8
March ,,				50·2	45·7	41·3	36·8	32·2	26·8	21·4	15·9	10·5	5·1	− 0 0·4	5·8	10·9	14·7	18·4	22·2
April ,,				49·8	45·3	40·9	36·4	31·7	26·3	20·9	15·5	10·0	4·6	0·8	6 2	11·2	15·0	18·7	22·5
May ,,				49·4	45·0	40·5	36·1	31·3	25·9	20·4	15·0	9·6	4·2	1·3	6·7	11·6	15·3	19·0	22·8
June ,,				49·1	44·6	40·2	35·7	30·8	25·4	20·0	14·6	9·1	3·7	1·7	7·1	11·9	15·6	19·4	...
July ,,				48·7	44·2	39·8	35·3	30·4	25·0	19·5	14·1	8·7	3·3	2·2	7·6	12·2	15·9	19·7	...
August ,,				48·3	43·9	39·4	35·0	29·9	24·5	19·1	13·7	8·2	2·8	2·6	8·0	12·5	16·2	20·0	...
September ,,				47·9	43·5	39·0	34·6	29·5	24·1	18·6	13·2	7·8	2·4	3·1	8·5	12·8	16·5	20·3	...
October ,,				47·6	43·1	38·7	34·2	29·0	23·6	18·2	12·8	7·3	1·9	3 5	8·9	13·1	16·9	20·6	...
November ,,				47·2	42·7	38·3	33·8	28·6	23·2	17·7	12·3	6·9	1·5	4·0	9·4	13·4	17·2	20·9	...
December ,,				46·8	42·4	37·9	33·5	28·1	22·7	17·3	11·9	6·4	1·0	4·4	9·9	13·7	17·5	21·2	...

Horizontal Force.

January 1st				C.G.S.	C.G.S.	C.G.S	C.G.S.	C.G.S	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C G.S.	C.G.S.	C.G.S.	C.G.S.
February ,,					·38679	·38717	·38754	·38792	·38822	·38851	·38881	·38910	·38940	·38969	·38991	·39014	·39036	·39059	·39081
March ,,					682	720	757	794	824	854	883	913	942	971	993	016	038	061	083
April ,,					685	723	761	797	826	856	885	915	945	973	995	018	040	063	085
May ,,					688	726	764	799	829	858	888	917	947	975	997	019	042	064	087
June ,,					692	729	767	802	831	861	890	920	949	976	999	021	014	066	089
July ,,					695	732	770	804	834	863	893	922	952	978	·39001	023	046	068	
August ,,					698	735	773	807	836	866	895	925	954	980	003	025	048	070	
September ,,					701	739	776	809	839	868	898	927	957	982	005	027	049	072	
October ,,					704	742	779	812	841	871	900	930	959	984	006	029	051	074	
November ,,					707	745	783	814	844	873	903	932	962	986	008	031	053	076	
December ,,				·38676	710	748	786	817	846	876	905	935	964	988	010	033	055	077	
					713	751	789	819	849	878	908	937	967	990	012	034	057	079	

Dip.

January 1st				+ 23° 1′·6	+ 23° 1′·3	+ 23° 1′·0	+ 23° 0′·7	+ 23° 0′·4	+ 23° 1′·5	+ 23° 2′·5	+ 23° 3′·6	+ 23° 4′·6	+ 23° 5′·7	+ 23° 6′·7	+ 23° 7′·2	+ 23° 7′·7	+ 23° 8′·2	+ 23° 8′·7	+ 23° 9′·2
February ,,				1·6	1·3	1·0	0·7	0·5	1·5	2·6	3·7	4·7	5·8	6·7	7·2	7·8	8·3	8·8	9·3
March ,,				1·6	1·2	1·0	0·7	0·6	1·6	2·7	3·7	4·8	5·9	6·8	7·3	7·8	8·3	8·8	9·3
April ,,				1·5	1·2	0·9	0·6	0·7	1·7	2·8	3·8	4·9	5·9	6·8	7·3	7·8	8·3	8·8	9·3
May ,,				1·5	1·2	0·9	0·6	0·8	1·8	2·9	3·9	5·0	6·0	6·9	7·4	7·9	8·4	8·9	9·4
June ,,				1·5	1·2	0·9	0·6	0·8	1·9	3·0	4·0	5·1	6·1	6·9	7·4	7·9	8·4	8·9	...
July ,,				1·5	1·2	0·9	0·6	0·9	2·0	3·0	4·1	5·2	6·2	7·0	7·5	8·0	8·5	9·0	...
August ,,				1·4	1·1	0·8	0·5	1·0	2·1	3·1	4·2	5·2	6·3	7·0	7·5	8·0	8·5	9·0	...
September ,,				1·4	1·1	0·8	0·5	1·1	2·2	3·2	4·3	5·3	6·4	7·0	7·5	8·0	8·5	9·1	...
October ,,				1·4	1·1	0·8	0·5	1·2	2·2	3·3	4·4	5·4	6·5	7·1	7·6	8·1	8·6	9·1	...
November ,,				1·4	1·1	0·8	0·5	1·3	2·3	3·4	4·4	5·5	6·6	7·1	7·6	8·1	8·6	9·1	...
December ,,				1·3	1·0	0·7	0·4	1·4	2·4	3·5	4·5	5·6	6·6	7·2	7·7	8·2	8·7	9·2	...

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Monthly mean values of the magnetic elements at the Kodaikānal Observatory, deduced from charts 1a to 3c.

Declination.

Months		1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
		° ′																		
January	1st		− 0 20·1	− 0 24·7	− 0 29·2	− 0 33·8	− 0 38·4	− 0 42·9	− 0 47·5	− 0 52·7	− 0 58·0	− 1 3·2	− 1 8·4	− 1 13·7	− 1 18·9	− 1 24·7	− 1 30·5	− 1 36·3	− 1 42·1	− 1 47·9
February	,,		20·5	25·0	29·6	34·2	38·8	43·3	47·9	53·2	58·4	3·6	8·9	14·1	19·4	25·2	31·0	36·8	42·6	48·4
March	,,		20·9	25·4	30·0	34·6	39·1	43·7	48·4	53·6	58·8	4·1	9·3	14·5	19·9	25·7	31·5	37·3	43·1	48·9
April	,,		21·2	25·8	30·4	34·9	39·5	44·1	48·8	54·0	59·3	4·5	9·7	15·0	20·4	26·2	32·0	37·8	43·6	49·4
May	,,		21·6	26·2	30·8	35·3	39·9	44·5	49·2	54·5	59·7	4·9	10·2	15·4	20·8	26·6	32·4	38·2	44·0	49·8
June	,,		22·0	26·6	31·1	35·7	40·3	44·9	49·7	54·9	− 1 0·2	5·4	10·6	15·9	21·3	27·1	32·9	38·7	44·5	
July	,,		22·4	27·0	31·5	36·1	40·7	45·2	50·1	55·4	0·6	5·8	11·1	16·3	21·8	27·6	33·4	39·2	45·0	
August	,,	− 0 18·2	22·8	27·3	31·9	36·5	41·0	45·6	50·6	55·8	1·0	6·3	11·5	16·7	22·3	28·1	33·9	39·7	45·5	
September	,,	18·6	23·1	27·7	32·3	36·9	41·4	46·0	51·0	56·2	1·5	6·7	11·9	17·2	22·8	28·6	34·4	40·2	46·0	
October	,,	18·9	23·5	28·1	32·7	37·2	41·8	46·4	51·4	56·7	1·9	7·1	12·4	17·6	23·3	29·1	34·9	40·7	46·5	
November	,,	19·3	23·9	28·5	33·0	37·6	42·2	46·8	51·9	57·1	2·3	7·6	12·8	18·0	23·7	29·5	35·3	41·1	46·9	
December	,,	19·7	24·3	28·9	33·4	38·0	42·6	47·1	52·3	57·5	2·8	8·0	13·2	18·5	24·2	30·0	35·8	41·6	47·4	

Horizontal Force.

		C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.
January	1st		·37383	·37393	·37404	·37415	·37426	·37437	·37147	·37472	·37496	·37521	·37546	·37571	·37595	·37627	·37658	·37690	·37721	·37753
February	,,		384	394	405	416	427	438	449	474	499	523	548	573	598	629	661	692	724	755
March	,,		384	395	406	417	428	438	451	476	501	525	550	575	600	632	663	695	727	758
April	,,		385	396	407	418	429	439	453	478	503	527	552	577	603	634	666	698	729	761
May	,,		386	397	408	419	429	440	455	480	505	529	554	579	606	637	669	700	732	763
June	,,		387	398	409	420	430	441	457	482	507	531	556	581	608	640	671	703	734	
July	,,		388	399	410	420	431	442	459	484	509	534	558	583	611	642	674	705	737	
August	,,	·37378	389	400	411	421	432	443	461	486	511	536	560	585	613	645	677	708	740	
September	,,	379	390	401	411	422	433	444	463	488	513	538	562	587	616	648	679	711	742	
October	,,	380	391	402	412	423	434	445	466	490	515	540	564	589	619	650	682	713	745	
November	,,	381	392	402	413	424	435	446	468	492	517	542	566	591	621	653	684	716	748	
December	,,	382	393	403	414	425	436	447	470	494	519	544	569	593	624	655	687	719	750	

Dip.

		° ′																		
January	1st		+ 3° 3′·0	+ 3° 8′·5	+ 3° 14′·0	+ 3° 19′·5	+ 3° 25′·0	+ 3° 30′·5	+ 3° 36′·0	+ 3° 42′·5	+ 3° 49′·0	+ 3° 55′·5	+ 4° 2′·0	+ 4° 8′·5	+ 4° 15′·0	+ 4° 19′·3	+ 4° 23′·6	+ 4° 27′·9	+ 4° 32′·1	+ 4° 36′·4
February	,,		3·5	9·0	14·5	20·0	25·5	31·0	36·5	43·0	49·6	56·1	2·6	9·1	15·4	19·6	23·9	28·2	32·5	36·8
March	,,		3·9	9·4	14·9	20·4	25·9	31·4	37·1	43·6	50·1	56·6	3·1	9·6	15·7	20·0	24·3	28·6	32·9	37·1
April	,,		4·4	9·9	15·4	20·9	26·4	31·9	37·6	44·1	50·6	57·1	3·6	10·1	16·1	20·4	24·6	28·9	33·2	37·5
May	,,		4·9	10·4	15·8	21·3	26·8	32·3	38·2	44·7	51·2	57·7	4·2	10·7	16·4	20·7	25·0	29·3	33·6	37·8
June	,,		5·3	10·8	16·3	21·8	27·3	32·8	38·7	45·2	51·7	58·2	4·7	11·2	16·8	21·1	25·4	29·6	33·9	
July	,,		5·8	11·3	16·8	22·3	27·8	33·3	39·3	45·8	52·3	58·8	5·3	11·8	17·1	21·4	25·7	30·0	34·3	
August	,,		6·2	11·7	17·2	22·7	28·2	33·7	39·8	46·3	52·8	59·3	5·8	12·3	17·5	21·8	26·1	30·4	34·6	
September	,,	+ 3 1·2	6·7	12·2	17·7	23·2	28·7	34·2	40·3	46·8	53·3	59·8	6·4	12·9	17·9	22·1	26·4	30·7	35·0	
October	,,	1·6	7·1	12·6	18·1	23·6	29·1	34·6	40·9	47·4	53·9	+ 4° 0·4	6·9	13·4	18·2	22·5	26·8	31·1	35·3	
November	,,	2·1	7·6	13·1	18·6	24·1	29·6	35·1	41·4	47·9	54·4	0·9	7·4	13·9	18·6	22·9	27·1	31·4	35·7	
December	,,	2·6	8·1	13·6	19·1	24·5	30·0	35·5	42·0	48·5	55·0	1·5	8·0	14·5	18·9	23·2	27·5	31·8	36·1	

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Monthly normal values of the magnetic elements at the Barrackpore Observatory, deduced from charts 1a to 3c.

Declination.

Months	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January 1st		° ′	+ 1° 23′·6	+ 1° 19′·4	+ 1° 15′·3	+ 1° 11′·1	+ 1° 6′·9	+ 1° 2′·7	+ 0° 57′·1	+ 0° 51′·5	+ 0° 45′·9	+ 0° 40′·2	+ 0° 34′·6	+ 0° 29′·0					
February ,,			23·3	19·1	14·9	10·7	6·5	2·2	56·6	51·0	45·4	39·8	34·2	28·5					
March ,,			22·9	18·7	14·6	10·4	6·2	1·8	56·2	50·5	44·9	39·3	33·7	28·1					
April ,,			22·6	18·4	14·2	10·0	5·8	1·3	55 7	50·1	44·5	38·8	33·2	27·6					
May ,,			22·2	18·0	13·9	9·7	5·5	0·8	55 2	49·6	44·0	38·4	32·8						
June ,,			21·9	17·7	13·5	9·3	5·1	0·4	54·8	49·1	43·5	37·9	32·3						
July ,,		+ 1 25·7	21·5	17·3	13·2	9·0	4·8	+ 0° 59·9	54 3	48·7	43·1	37 4	31·8						
August ,,		25·4	21·2	17·0	12·8	8·6	4·4	59·4	53·8	48·2	42·6	37·0	31·4						
September ,,		25·0	20·8	16·6	12·5	8·3	4·1	59·0	53·3	47·7	42·1	36·5	30·9						
October ,,		24·7	20·5	16·3	12·1	7·9	3·8	58·5	52·9	47·3	41·6	36·0	30·4						
November ,,		24·3	20·1	15·9	11·8	7·6	3·4	58·0	52·4	46·8	41·2	35 6	30·0						
December ,,		24 0	19·8	15·6	11·4	7·2	3·1	57·6	51·9	46·3	40·7	35·1	29·5						

Horizontal Force.

January 1st		C.G.S	C.G.S	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.					
February ,,			·37240	·37256	·37272	·37288	·37304	·37320	·37336	·37353	·37369	·37385	·37402	·37418					
March ,,			242	257	273	289	305	321	338	354	370	387	403	419					
April ,,			243	259	275	291	307	323	339	355	372	388	404	421					
May ,,			244	260	276	292	308	324	340	357	373	389	406	422					
June ,,			246	261	277	293	309	325	342	358	374	391	407						
July ,,			247	263	279	295	311	327	343	359	376	392	408						
August ,,		·37234	248	264	280	296	312	328	344	361	377	393	410						
September ,,		235	250	265	281	297	313	330	346	362	378	395	411						
October ,,		236	251	267	383	299	315	331	347	364	380	396	412						
November ,,		238	252	268	284	300	316	332	349	365	381	398	414						
December ,,		239	253	269	285	301	317	334	350	366	383	399	415						
			255	271	287	303	319	335	351	368	384	400	417						

Dip.

January 1st			+ 30° 18′·4	+ 30° 21′·9	+ 30° 25′·5	+ 30° 29′·0	+ 30° 32′·5	+ 30° 36′·0	+ 30° 40′·2	+ 30° 44′·4	+ 30° 48′·6	+ 30° 52′·8	+ 30° 56′·9	+ 31° 1′·1					
February ,,			18·7	22·2	25·7	29·3	32·8	36·3	40·5	44·7	48 9	53·1	57·3	1·4					
March ,,			19·0	22·5	26·0	29·6	33·1	36·7	40·9	45·1	49·3	53·5	57·6	1·8					
April ,,			19·3	22·8	26·3	29·8	33·4	37·0	41·2	45·4	49·6	53·8	58·0	2·1					
May ,,			19·6	23·1	26·6	30·1	33·7	37·4	41·6	45·8	50·0	54·1	58·3						
June ,,			19 9	23·4	26·9	30·4	33·9	37·7	41·9	46·1	50·3	54·5	58·7						
July ,,			20·2	23·7	27·2	30·7	34·2	38·0	42·3	46·5	50·7	54·8	59·0						
August ,,		+ 30° 17·0	20·5	24·0	27·5	31·0	34·5	38·4	42·6	46·8	51·0	55·2	59·4						
September ,,		17·2	20·8	24·3	27·8	31·3	34·8	38·8	43·0	47·2	51·4	55·5	59·7						
October ,,		17·5	21·1	24·6	28·1	31·6	35·1	39·1	43·3	47·5	51·7	55·9	+ 31° 0·1						
November ,,		17·8	21·3	24·9	28·4	31·9	35·4	39·5	43·7	47·9	52·1	56·2	0·4						
December ,,		18·1	21·6	25·2	28·7	32·2	35·7	39·9	44·0	48·2	52·4	56·6	0·8						

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Monthly normal values of the magnetic elements at the Alibāg Observatory deduced from charts 1a to 3c.

Declination.

Months		1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
January	1st	+1° 14′·1	+1° 12′·4	+1° 10′·7	+1° 9′·1	+1° 7′·4	+1° 5′·7	+1° 4′·1	+1° 2′·4	+1° 0′·7	+0° 57′·7	+0° 54′·6	+0° 51′·6	+0° 48′·6	+0° 45′·5	+0° 42′·5	+0° 38′·2	+0° 33′·9	+0° 29′·5	+0° 25′·2	+0° 20′·9
February	,,	13·9	12·3	10·6	8·9	7·3	5·6	3·9	2·2	0·5	57·4	54·4	51·4	48·3	45·3	42·1	37·8	33·5	29·2	24·8	20·5
March	,,	13·8	12·1	10·5	8·8	7·1	5·4	3·8	2·1	0·2	57·2	54·1	51·1	48·1	45·0	41·8	37·5	33·1	28·8	24·5	20·1
April	,,	13·7	12·0	10·3	8·6	7·0	5·3	3·6	2·0	+0° 59·9	56·9	53·9	50·8	47·8	44·8	41·4	37·1	32·8	28·4	24·1	19·8
May	,,	13·5	11·8	10·2	8·5	6·8	5·2	3·5	1·8	59·7	56·7	53·6	50·6	47·6	44·5	41·1	36·7	32·4	28·1	23·8	19·4
June	,,	13·4	11·7	10·0	8·4	6·7	5·0	3·4	1·7	59·4	56·4	53·4	50·3	47·3	44·3	40·7	36·4	32·0	27·7	23·4	
July	,,	13·2	11·6	9·9	8·2	6·6	4·9	3·2	1·6	59·2	56·2	53·1	50·1	47·1	44·0	40·3	36·0	31·7	27·4	23·0	
August	,,	13·1	11·4	9·8	8·1	6·4	4·8	3·1	1·4	58·9	55·9	52·9	49·8	46·8	43·8	40·0	35·7	31·3	27·0	22·7	
September	,,	13·0	11·3	9·6	8·0	6·3	4·6	2·9	1·3	58·7	55·6	52·6	49·6	46·5	43·5	39·6	35·3	31·0	26·6	22·3	
October	,,	12·8	11·2	9·5	7·8	6·1	4·5	2·8	1·1	58·4	55·4	52·4	49·3	46·3	43·3	39·3	34·9	30·6	26 3	21·9	
November	,,	12·7	11·0	9·3	7·7	6·0	4·3	2·7	1·0	58·2	55·1	52·1	49·1	46·0	43·0	38·9	34·6	30·2	25·9	21·6	
December	,,	12·5	10·9	9·2	7·5	5·9	4·2	2·5	0·9	57·9	54·9	51·9	48·8	45·8	42·8	38·5	34·2	29·9	25·6	21·2	

Horizontal Force.

		C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.	C.G.S.
January	1st		·36828	·36823	·36818	·36813	·36808	·36803	·36798	·36793	·36799	·36805	·36811	·36817	·36822	·36828	·36834	·36840	·36846	·36851	·36857
February	,,		827	822	817	812	807	802	797	794	800	805	811	817	823	829	834	840	846	852	858
March	,,		827	822	817	812	807	802	797	794	800	806	812	817	823	829	835	841	847	852	858
April	,,		827	822	817	812	807	802	797	795	801	806	812	818	824	830	835	841	847	853	859
May	,,		826	821	816	811	806	801	796	795	801	807	813	818	824	830	836	842	848	853	859
June	,,		826	821	816	811	806	801	796	796	801	807	813	819	825	831	836	842	848	854	
July	,,		825	820	815	810	805	800	795	796	802	808	814	819	825	831	837	843	849	854	
August	,,		825	820	815	810	805	800	795	797	802	808	814	820	826	832	837	843	849	855	
September	,,		824	819	814	809	804	799	794	797	803	809	815	820	826	832	838	844	849	855	
October	,,		824	819	814	809	804	799	794	798	803	809	815	821	827	833	838	844	850	856	
November	,,		824	819	814	809	804	799	794	798	804	810	816	821	827	833	839	845	850	856	
December	,,		823	818	813	808	803	798	793	799	804	810	816	822	828	833	839	845	851	857	

Dip.

January	1st		+22° 36′·8	+22° 43′·8	+22° 50′·8	+22° 57′·9	+23° 4′·9	+23° 11′·9	+23° 19′·0	+23° 26′·0	+23° 34′·6	+23° 43′·2	+23° 51′·8	+24° 0′·5	+24° 9′·1	+24° 17′·7	+24° 24′·8	+24° 31′·9	+24° 39′·0	+24° 46′·2	+24° 53′·3
February	,,		37·4	44·4	51·4	58·5	5·5	12·5	19·6	26·7	35·3	44·0	52·6	1·2	9·8	18·3	25·4	32·5	39·6	46·8	53·9
March	,,		37·9	45·0	52·0	59·0	6·1	13·1	20·1	27·4	36·1	44·7	53·3	1·9	10·5	18·9	26·0	33·1	40·2	47·4	54·5
April	,,		38·5	45·6	52·6	59·6	6·7	13·7	20·7	28·2	36·8	45·4	54·0	2·6	11·2	19·5	26·6	33·7	40·8	47·9	55·1
May	,,		39·1	46·2	53·2	+23° 0·2	7·2	14·3	21·3	28·9	37·5	46·1	54·7	3·3	12·0	20·1	27·2	34·3	41·4	48·5	55·7
June	,,		39·7	46·7	53·8	0·8	7·8	14·9	21·9	29·6	38·2	46·8	55·4	4·1	12·7	20·7	27·8	34·9	42·0	49·1	
July	,,		40·3	47·3	54·4	1·4	8·4	15·5	22·5	30·3	38·9	47·5	56·2	4·8	13·4	21·3	28·4	35·5	42·6	49·7	
August	,,		40·9	47·9	54·9	2·0	9·0	16·0	23·1	31·0	39·6	48·3	56·9	5·5	14·1	21·9	29·0	36·1	43·2	50·3	
September	,,		41·5	48·5	55·5	2·6	9·6	16·6	23·7	31·7	40·4	49·0	57·6	6·2	14·8	22·4	29·6	36·7	43·8	50·9	
October	,,		42·0	49·1	56·1	3·1	10·2	17·2	24·2	32·5	41·1	49·7	58·3	6·9	15·5	23·0	30·2	37·3	44·4	51·5	
November	,,		42·6	49·7	56·7	3·7	10·8	17·8	24·8	33·2	41·8	50·4	59·0	7·6	16·3	23·6	30·7	37·9	45·0	52·1	
December	,,		43·2	50·3	57·3	4·3	11·3	18·4	25·4	33·9	42·5	51·1	59·7	8·4	17·0	24·2	31·3	28·5	45·6	52·7	

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Descriptions of Repeat Stations

No. I Udaipur

λ 24° 34′ 42″ N.
L 73 42 46 E.
Sheet 45 H.

On a mound in a field, about 100 yards SSE. of the temple of "Bhairoan" and the road from the railway station to the Suraj Pal Gate of Udaipur city. "Bhairoan" temple is a little over ½ mile from the railway station. The site is in the lands of the town of Udaipur, Udaipur State, Province Rajputana. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic station". 2½ feet of the pillar is below the surface of the ground and half a foot above it. The true bearings of surrounding objects are:—Large tree on fortified hill 232° 42′; Sajan Garh Palace (highest part), on distant hill, 282° 1′; S. corner of enclosure of temple of "Bhairoan" 332° 31′; temple 346° 35′.

No. II Karachi

λ 24° 49′ 24″ N.
L 67 2 28 E.
Sheet 35 P.

On the highest part of a rocky hillock about 25 feet high and about 50 yards west of the Gizri road, on the first rising ground between Karachi and Gizri after leaving the race course. The site is in the lands of Gizri, Karachi Sub-Divison and District, Province Sind. The station is marked by a stone pillar cut out of a rock in sitū measuring ¾ foot × 1½ feet × 1½ feet, plastered with cement and bearing on its surface the inscription "G.T.S. Magnetic Station". 6 inches of the pillar is below the surface of the ground and 3 inches above it. The true bearings of surrounding objects are:—The more tapering of two spires almost in transit 337° 17′; summer house of Rajā's Takri 37° 34′; broad white G.T.S. Pillar 117° 12′; church spire 300° 44′; Manora Light House the true bearing of which has been accurately determined, 243°-37′-55″.

No. III Quetta

λ 30° 12′ 21″ N.
L 66 59 55 E.
Sheet 34 J.

Near to the NE. of the Race-course and about 50 yards east by south of the bridge over a small canal on Jail road. The site is on Government land leased by Abdul Satar, shopkeeper of Quetta, in the Quetta Subdivision and District, Baluchistan. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot bearing on its surface the inscription "G. T. S. Magnetic station". 2½ feet of the pillar is below the surface of the grouud and half a foot above it. The true bearings of surrounding objects are:—Cantonment boundary pillar 8° 9′, 122 feet; railway signal post 148° 33′; distant hill peak 149° 50′; South gable end of grand stand 245° 33′; boundary pillar near bridge on Jail Road 281° 28′, 133¾ feet.

No. IV Bahawalpur

λ 29° 24′ 23″ N.
L 71 40 35 E.
Sheet 39 O.

13 Chains east by north from the north-east corner of the Guest House and situated on a maidan, the western portion of which is used as a foot ball ground. The site is in the Bahāwalpur State, Province Punjab. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2 feet of the pillar is below the surface of the ground and 1 foot above it. The true bearings of surrounding objects are:—Covered well 276° 3′, single large tree 257° 5′, 244 feet.

No. V Rawalpindi

λ 33° 35′ 25″ N.
L 73 3 6 E.
Sheet 43 G.

At the north end of the British Infantry parade ground and 356′ 9″ from the Queen's Statue, 343′ 6″ from the Compound wall of the club bungalow and 366 feet south by west of the Kitson Lamp-post near the Queen's Statue at the junction of the Mall and Murree Roads: these roads are respectively to the north-east and north-west of the site. The site is in the Cantonment lands of Rāwalpindi, District Rāwalpindi, Province Punjab. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2 feet of the pillar is below the surface of the ground and 1 foot above it. The true bearings and distances of surrounding objects are:—Queen's Statue 4° 10′, 356¾ feet; Club bungalow 80° 50′, 343½ feet; Kitson Lamp-post 15° 34′, 366 feet; steeple of Christ Church 143° 53′; 2nd telegraph post from Statue 306° 22′, 275½ feet. This station was destroyed by the Cantonment authorities in October 1924.

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No. VI Bharatpur

λ 27° 13′ 53″ N.
L 77 29 24 E.
Sheet 54 E.

South of the railway station, 462 feet south by west of the Dāk Bungalow and on a piece of waste land shown on the *Khasra* map of Bharatpur as plot No. 1546. The site is in the Bharatpur State, Rajputana. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—South top storey of Dharmsāla 70° 38′; chimney of Dāk Bungalow 14° 33′; chimney of Railway Rest-house 334° 41′; distant signal 302° 58′; south-west and south-east corners of Dāk Bungalow 441 feet and 449 feet respectively.

No. VII Bangalore

λ 12° 58′ 43″ N.
L 77 35 26 E.
Sheet 57 H.

Under a mango tree in the southern part of the Residency compound and 453 feet to the north of the south entrance to the Residency. District Bangalore, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of the surrounding objects are:—Church spire, 90° 32′; central pediment of the Mysore Revenue Offices, 132° 53′; western pediment of the Mysore Revenue Offices, 166° 46′; west pillar of gate at the south entrance to the Residency, 182° 46′, 453 feet 5 inches; central pediment of Kantha Raja Ur's House 269° 9′; top end of racquet-court wall, 332° 24′, 795 feet 10 inches; iron post near golf tee 38 feet 9 inches.

No. VIII Dharwar

λ 15° 26′ 36″ N.
L 75 0 10 E.
Sheet 48 M.

About 300 yards north-east of the Railway Station, close to the south of "Malmeddy" and east of a guava garden: it is under a mango tree and is 265 feet east of a furlong-stone marked $\frac{0}{6}$ on the road from the Railway Station to Dhārwār. The site is in the village land of Saptapur (Settlement Survey No. 74), District Dhārwār, Bombay Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground, and ½ foot above it. The true bearings and distances of the surrounding objects are:—Telegraph post 4° 30′, 158 feet 8 inches; corner of boundary wall of "Malmeddy" 52° 9′, 143 feet 4 inches; Ramangawdas House 107° 22′; furlong-stone (marked $\frac{0}{6}$) on the road from the Railway Station to Dhārwār 282° 18′, 265 feet 3 inches; central pediment of railway offices 324° 42′.

No IX Porbandar

λ 21° 37′ 43″ N.
L 69 36 39 E.
Sheet 41 G.

In the middle of the second platform west of the Guest House. The platform which is situated on the sea beach is used for pitching a tent on. The site is in the lands of Porbandar, Porbandar State, Kathiawar. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station." 2½ feet of the pillar is below the surface of the ground, and ½ foot above it. The true bearings and distances of surrounding objects are:—Large Hindu temple 36° 29′; chimney of Guest House 87° 49′; west corner of wall enclosure of Guest House 107½ feet; centre of bastion 134° 12′; Porbandar Light-house 308° 19′; central dome of Administrator's office 327° 22′; chimney of Lal Kothi 351° 55′; south-east corner of wall enclosure of Lal Kothi 271 feet 10 inches.

No. X Fyzabad

λ 26° 48′ 5″ N.
L 82 8 5 E.
Sheet 63 J.

North of the Brigade parade ground (also known as the Native Regiment's parade ground) which is east of the Guptar Lines, east of a group of three tamarind trees and west of a single mango tree. The site is in the lands of Fyzābād Cantonment, District Fyzābād, U.P. of Agra & Oudh. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and 6 inches above it. The true bearings and distances of surrounding objects are:—north-west corner of compound wall of slaughter house 132° 59′; dome of magazine store house 210° 33′; mango tree 86 feet; well (kachcha) 653 feet 6 inches; southernmost tamarind tree 128 feet; middle tamarind tree 130 feet 9 inches.

No. XI Sambalpur

λ 21° 27′ 52″ N.
L 83 58 35 E.
Sheet 64 O.

About 500 yards to the south of the railway level crossing: it is on a bit of grass land in the Police Lines and a little to the north-east of a mango tree between the Inspector's quarters and the barracks. The site is in the Police Lines at Sambalpur, District Sambalpur, Bihar and Orissa. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S.

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Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings of the surrounding objects are:—Culvert and well 264° 49′; south-east corner of the hospital 350° 35′; culvert opposite to the hospital 16° 7′; south-west corner of the barracks 89° 16′.

No. XII Waltair

° ′ ″
λ 17 42 23 N.
L 83 17 44 E.
Sheet 65 O.

On the Police parade ground and near the Police quarters, 307 feet south-west by south of the Police magazine. The site is in the lands of the Police Department, Sub-division and District Vizagapatam, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Gable end of north-east portion of front Police block 19° 31′; lowest part of north-western corner of Police Magazine 61° 22′; 307 feet 1 inch; north-western corner of office of Superintendent of Police 106° 28′; temple on hill 145° 14′; turret of Roman Catholic Church on hill 205° 20′; south-western gable end of front Police block 235° 55′; 324 feet 8 inches.

No. XIII Darjeeling

° ′ ″
λ 26 59 42 N.
L 88 16 56 E.
Sheet 78 B.

About 5 furlongs to the east-south-east of the Senchal Dāk Bungalow and south of the road that leads from Ghoom to Tiger Hill. A tin shed belonging to the Golf club is 222 feet to the north-north-east of the site measured along the slopes of the hillock which obscures the view of the shed. The best approach to the site is from Ghoom Railway Station, 3 miles distant. District Darjeeling, Province Bengal. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and half a foot above it. The true bearing of the southernmost of 3 chimney-stalks is 297° 10′.

No. XIV Gaya

° ′ ″
λ 24 47 7 N.
L 84 59 47 E.
Sheet 72 D.

On an open maidan NE. of the Gayā Church and due south of the public library building: it is 318 feet from a culvert on the road in front of the gate of the library. The site is in the lands of the town of Gayā, Patna Division, Gayā District, Behar Province. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Culvert on road 318 feet; western pillar of gateway of public library 4° 20′; north-western corner of Baptist Mission Church 66° 7′; north-western corner of wall enclosure of tank 464 feet; south-western corner of wall enclosure of tank 151° 9′; north-eastern corner of church compound wall 700 feet; spire of Gayā Church 217° 17′.

No. XV Secunderabad

° ′ ″
λ 17 27 44 N.
L 78 29 37 E.
Sheet 56 K.

Near the south-eastern corner of a tope of trees alongside a road and east of the compound of Mr. Chenoy's bungalow and 364 feet north-north-east of the culvert on Kharkhana road. The site is in the cantonment of Secunderābād, District Secunderābād, Hyderābād-Deccan. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Central abutment of culvert on Kharkhana road 201° 57′; 364 feet 4 inches; south-eastern corner of the wall of the compound of Mr. Chenoy's bungalow 261° 5′; 389 feet 9 inches; south tangent of wall of disused well 282° 1′; 186 feet 1 inch; south pillar of gate at main entrance to Mr. Chenoy's bungalow 357° 2′; south corner of water tank on hillock 36° 10′.

No. XVI Bhusawal

° ′ ″
λ 21 3 40 N.
L 75 47 0 E.
Sheet 46 O.

212 feet east of the road from Bhusāwal to Yaval and 254 feet south-east of a mile-stone marked "Bhusāwal 1 mile Yaval 10 miles", where the road begins to descend to the ford across the Tāpti river. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The site is in the Bhusāwal Sub-division, East Khāndesh, Bombay Presidency. The true bearings and distances of surrounding objects are:—Topmost spire of Masonic Lodge 124° 31′; door of Pārsi church 165° 38′; west gable end of huts of caretakers of the Pārsi cemetery 198° 25′; mile-stone 294° 21′, 254 feet 4 inches; two tombs 319° 1′ and 0° 2′ respectively; temple across the Tāpti river 92° 1′.

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No. XVII Jubbulpore

° ′ ″
λ 23 9 26 N.
L 79 57 9 E.
Sheet 55 M.

On the recreation grounds south of the road in front of the Royal Artillery mess and about 100 yards south of the western gate-post of the mess. The site is in the cantonment of Jubbulpore, District Jubbulpore, Central Provinces. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are :—western gate-post of R.A. Mess 351° 35′, 307 feet; southern gate-post of small church 92° 3′, 368 feet; spire of large church 172° 59′; north end of culvert 233° 30′.

No. XVIII Tavoy

° ′ ″
λ 14 5 3 N.
L 98 12 14 E.
Sheet 95 J.

North-east of the town of Tavoy, about 1 mile north by east of the court house and between two rubber trees on the edge of an old burial ground close to the north edge of the road to Patwa. The site is in the lands of the town of Tavoy, District Tavoy, Lower Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are :—white pagoda 120° 45′; golden pagoda 216° 0′; culvert 3° 35′.

No. XIX Lashio

° ′ ″
λ 22 56 12 N.
L 97 44 48 E.
Sheet 93 F.

At the south end of the parade ground and about 90 yards north-west from the north-western corner of the fort. The site is in the town lands of Lashio, District Northern Shan States, Upper Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are :—East centre gable end of Military Office 331° 8′; north-western corner of Fort 124° 27′; south-western corner of Fort 153° 23′; manhole of water pipe 279° 54′, 143 feet.

No. XX Akyab

° ′ ″
λ 20 8 6 N.
L 92 53 37 E.
Sheet 84 D.

On the north-eastern portion of a large *maidan*, about ¾ mile south-west of the landing wharf and about 250 yards due west of the Church : it is under the north side of an old mango tree and about 40 yards from a nulla used by *Dhobies*. The site is in the town lands of Akyab, District Akyab, Lower Burma. The true bearings and distances of surrounding objects are :—Nearest telegraph post 338° 6′, 150 feet; large banyan tree near road 14° 4′; lamp post 86° 29′; near mango tree 161° 44′, 25 feet.

No. XXI Silchar

° ′ ″
λ 24 49 14 N.
L 92 47 27 E.
Sheet 83 D.

About ¼ mile south-east of the Railway Station, near the eastern end of the old rifle range, south-east of the reserve tank west of the Normal School and about 60 feet south-east of a small boundary pillar marked S. M. The site is in the town lands of Silchar, District Cāchār, Assam. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are :—North-western corner of school building 83° 54′; culvert on road to Railway Station 2° 4′; culvert SW. of reserve tank 258° 24′.

No. XXII Dibrugarh

° ′ ″
λ 27 29 12 N.
L 94 54 35 E.
Sheet 83 I.

On the parade ground of the Military Police, near the District Courts and 79 feet east of the "*Kacheri* gate" of the Deputy Commissioner's house. The site is in the town lands of Dibrugarh, District Lakhimpur, Assam. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". About 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are :—Church 294° 58′; "*Kacheri* gate" of D.C's house 275° 58′, 79 feet; west gable end of *Kacheri* 88° 58′; north-eastern corner of the Deputy Commissioner's office room 108 feet.

No. XXIII Port Blair

° ′ ″
λ 11 39 53 N.
L 92 42 48 E.
Sheet 87 A.

On the high ground to the north of Navy Bay, about 40 yards to the north-west of a masonry well near the road from Navy Bay to Phœnix Bay. The station is marked by a concrete pillar 2 feet × 2 feet × 2 feet bearing on its upper surface which is flush with the ground level, a circle and dot mark and the inscription "M.S. 1909". An azimuth pillar, built of bricks and 5 feet high

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is 200 yards south-west of the station pillar, the reference mark on it being a black painted disc with a circular white centre. The site is in the Haddow Sub-division, Eastern District, Andaman Islands. The true bearings and distances of surrounding objects are:—The white centre of reference mark of azimuth pillar 229° 10′, 200 yards; Viper Jail 260° 50′; Haddow Sub-Divisional Officer's bungalow 13° 30′; Forest Officer's bungalow 105° 10′; masonry well 126° 30′, 40 yards.

No. XXIV Ruk Junction

λ 27° 48′ 23″ N.
L 68° 38′ 20″ E.
Sheet 40 A.

On waste land about 650 yards south-west of Ruk Junction Railway Station. The site is in the village of Shakalipur, tāluka Garhi Yāsīn, District Sukkur, Province Sind. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—South-west corner of Railway Station 38° 32′; iron-rail post (almost in line with the SW. corner of Railway Station) 38° 11′, 672 feet 5 inches; railway east cabin 74° 17′; chimney of dairy manager's bungalow 104° 3′; railway semaphore signal 339° 16′; N.W. Railway boundary pillar 652 feet 9 inches.

No. XXV Lahore

λ 31° 35′ 50″ N.
L 74° 18′ 50″ E.
Sheet 44 I.

At the north end of Minto Park, near the locality known as Badami Bāgh. The site is in Government lands in the *pargana* and district of Lahore, Punjab. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station." 2 feet of the pillar is below the surface of the ground and 1 foot above it. The true bearings and distances of surrounding objects are:—single *babul* tree 199½ feet; Badshah Masjid 195° 14′; stone pillar marked (12) 308° 36′, 157½ feet.

No. XXVI Peshawar

λ 34° 0′ 40″ N.
L 71° 53′ 40″ E.
Sheet 38 N.

On a high mound ¼ mile SE. of the Railway Station and close to SE. of the Army Bearer Corps Lines and near a long mud wall of a fruit garden. The site is in the village lands of Bhanamari, District Peshāwar, North-West Frontier Province. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2 feet of the pillar is below the surface of the ground and 1 foot above it. The true bearings and distances of surrounding objects are:—Cantonment boundary pillar marked $\frac{14}{A}$ 52° 42′, 375 feet 4 inches; dome of King Akbar's palace 64° 31′; cantonment boundary pillar marked $\frac{14}{D}$ 348° 24′, 175 feet 8 inches.

No. XXVII Kundian

λ 32° 27′ 30″ N.
L 71° 28′ 20″ E.
Sheet 38 P.

On the sandy ground about 160 yards north-west of the Kundiān Dāk bungalow. The site is in the village lands of Kundiān Pakka, Sub-division and District Mianwali, Punjab. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station." 2 feet of the pillar is below the surface of the ground and 1 foot above it. The true bearings and distances of surrounding objects are:—N.W. Railway boundary pillar 71° 18′, 314 feet 8 inches; south-western boundary pillar of Dāk Bungalow compound 159° 8′, 473 feet 7 inches; Masjid 209° 24′.

No. XXVIII Sachin

λ 21° 4′ 40″ N.
L 72° 52′ 40″ E.
Sheet 46 C.

At the north-eastern end of a large piece of waste land, and about 500 yards east by south of the Railway Station and east of the south railway cabin and near to a foot-path from the railway crossing to Lajpur. The site is in the village lands of Kansad in Sachīn State, Surat Agency, Bombay Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings of surrounding objects are:—Flag staff of the Nawab's residence 20° 34′; north gable end of the south railway cabin 275° 26′.

No. XXIX Bikaner

λ 28° 0′ 40″ N.
L 73° 18′ 50″ E.
Sheet 44 H.

On the large plain south of the Railway Station and in the south-west vicinity of Jamnolaitalai. The site is in the town lands of Bīkaner: Sub-division and State Bīkaner, Rajputana, The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Palace clock tower 10° 19′; railway semaphore signal 61° 3′; temple in garden 144° 33′; south-east corner of walled

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enclosure of Mukhtar's garden 255° 35′, 482 feet 8 inches; south gable end of power house 308° 19′; the largest minaret of Dungar Memorial College 337° 55′.

No. XXX Ajmer

° ′ ″
λ 26 27 30 N.
L 74 38 30 E.
Sheet 45 J.

On the *bānd* of the Bichhla tank, 100 feet from an old bathing *ghāt* and due west of the Railway Loco. Superintendent's bungalow. The site is in the village lands of Ajmer in Thok Malian field No. 3695 of the Settlement Survey of 1915, Sub-division and District Ajmer, Rajputana. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—South bastion of wall enclosure of Oswāl boarding house 1° 47′; south-west corner of Railway Loco. Superintendent's bungalow 92° 7′; steeple of the Protestant church 244° 45′; clock tower 286° 42′; south-east corner of wall enclosure of well 317° 13′; north end of old bathing *ghāt* 100 feet.

No. XXXI Mirpur Khas

° ′ ″
λ 25 31 19 N.
L 69 1 40 E.
Sheet 40 G.

About 200 yards south of the large bridge on the Mīrpur Khās-Umarkot road over the Puran Chhandan canal which is east of the railway crossing. The true bearing of the south-east corner of Messrs. Ralli Brothers' Factory quarters and the south-east corner of the gateman's hut at the railway crossing, both of which are in the same line, is 326° 58′ from the magnetic station. The distance from the station to the canal, in a north-easterly direction, is about 125 feet. The site is in the village lands of Mīrpur Khās, Sub-division Mīrpur Khās, District Thar and Pārkar, Sind. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2 feet 3 inches of the pillar is below the surface of the ground and 9 inches above it.

No. XXXII Viramgam

° ′ ″
λ 23 8 10 N.
L 72 3 30 E.
Sheet 46 A.

On cultivated land, 40 yards north of the road from Viramgām to Kokta and on the opposite side of the road to a large Muhammadan cemetery, which is a little more than ½ mile from the Viramgām railway crossing. The site is in the village lands of Viramgām, Sub-division Viramgām, District Ahmadābād, Bombay Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—West gable end of Gordhan Seth's house 89° 48′; two large tombs in the Muhammadan cemetery 141° 5′ and 188° 44′; north gable end of Alfred Company's spinning and weaving mill 232° 18′; south chimney of mill 261° 15′; well to the south-west, 118 feet 1 inch.

No. XXXIII Dhond

° ′ ″
λ 18 28 0 N.
L 74 35 10 E.
Sheet 47 J.

Near the north-west end of the camping ground in front of the Travellers' Bungalow. The corners of the ground are marked by four large boundary pillars, the north-west pillar being west by south and distant 119½ feet from the site. It is in the village lands of Dhond (Settlement-Survey field No. 2), Sub-division Bhīmthadi, District Poona, Bombay Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of the surrounding objects are:—South-west boundary pillar of camping ground 193° 58′, 664¼ feet; north-west boundary pillar of camping ground 246° 9′, 119½ feet; middle pier of railway bridge 335° 1′; distant temple 58° 54′; large temple in Dhond village 103° 29′; spire of Roman Catholic Church 116° 21′; west gable end of Dāk Bungalow 173° 52′; one of the smaller boundary pillars of the camping ground 58¼ feet.

No. XXXIV Hotgi

° ′ ″
λ 17 33 40 N.
L 76 0 20 E.
Sheet 56 C.

On a large open piece of ground, 717 feet west by north of the westernmost bungalow occupied by the Indian guards of the railway. The site is in the village lands of Hotgi, Sub-division and District Sholāpur, Bombay Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—North-west gable end of goods-shed 52° 27′; gable end of the westernmost block of railway guards' quarters 88° 35′, 717 feet; zinc roofed cattle-shed 222° 12′; south-east corner of cemetery 314° 36′; east end of roof of Loco Foreman's bungalow 337° 32′.

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No. XXXV Guntakal

° ′ ″
λ 15 10 48 N.
L 77 22 57 E.
Sheet 57 E.

About 300 yards north-north-west of the Government Telegraph and Post Office and near a cactus hedge the eastern corner of which is 129 feet from the site. It is in the village lands of Timmencherla, Sub-division Gooty, District Anantapur, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Settlement Survey pillar 57° 42′, 632 feet 8 inches; masonry well in Hampiah and Co's compound 181° 2′, 472 feet; upper eastern end of Railway Station 190° 19′; railway semaphore signal 233° 14′; chimney of mill 291° 30′.

No. XXXVI Arkonam

° ′ ″
λ 13 4 30 N.
L 79 40 20 E.
Sheet 57 O.

85 feet WNW. of the boundary stone at the south-west corner of the Railway Volunteers' encamping ground. The site is in the village lands of Ammanur, Sub-division Arkōnam, District North Arcot, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Large rock *in situ* 2° 49′, 126 feet 8 inches; east gable end of eastern bungalow of Railway Officers' quarters 33° 5′; north-western boundary stone of F. D. tope No. 5, 164° 5′; south-eastern corner of Railway Volunteer Magazine 317° 16′; railway semaphore signal 328° 44′; centre of porch of western bungalow of Railway Officers' quarters 352° 46′.

No. XXXVII Perambur

° ′ ″
λ 13 6 40 N.
L 80 15 0 E.
Sheet 66 C.

At the south end of the dry bed of a large tank which is south of the Perambūr Railway Station. The site is in the village lands of of Perambūr in Revenue Survey plot No. 309, *tāluk* Madras, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—West boundary stone of field 347° 17′, 149 feet; east boundary stone of field 7° 17′, 145 feet 5 inches; north-west corner of boundary wall of garden 119° 5′; chimney of the brick, tile and iron works factory 187° 48′.

No. XXXVIII Cannanore

° ′ ′
λ 11 52 30 N.
L 75 22 0 E.
Sheet 49 M.

On the parade ground in front of the Dāk Bungalow and 380 feet SSE. of the south-eastern corner of the boundary wall of the District Munsiff's Court. The site is in the village lands of Kanathur, Sub-division Chirakkal, District Malabar, Madras Presidency. The station is marked by a concrete pillar 2 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 1½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—West turret of Municipal High School 40° 20′; culvert on Central Jail Road 379 feet; porch of Mammikunhi Haji's bungalow 95° 37′; north gate-post of "Sorab Lodge" 123° 25′; north end of verandah of Dāk Bungalow 258° 39′; north-east gable end of Vakils' chambers 290° 52′; south-east corner of boundary wall of District Munsiff's Court 328° 45′, 379 feet 10 inches.

No. XXXIX Birur

° ′ ″
λ 13 35 50 N.
L 75 58 10 E.
Sheet 48 O.

On pasture land, 279 feet south of the mile-stone marked "O", at the junction of the road from the Railway Station and the Birūr-Kadūr road. The site is in the village lands of Amritmahal, Kaval Birūr, Sub-division and District Kadūr, Mysore State. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Mile-stone marked "O" at junction of roads 12° 17′, 279 feet; single conspicuous tree on plateau 45° 57′; east gable end of Railway Station 255° 26′; east gable end of Travellers' Bungalow 287° 52′; east gable end of old cattle pound 331° 59′.

No. XL Miraj

° ′ ″
λ 16 49 10 N.
L 74 38 10 E.
Sheet 47 L.

On cultivated land 364 feet SE. by S. of the first large bridge met with along the road from the railway level crossing to Kolhāpur, and NE. of the bridge on the Kolhāpur Branch Railway. The site is in the village lands of Miraj, *taluka* and State Miraj, Bombay Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic

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Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The bearings and distances of surrounding objects are:—Corner of railway water-tank 44° 5′; spire of Roman Catholic Church 98° 19′; railway semaphore signal 145° 17′; end of east abutment of the bridge on the Kolhāpur Branch Railway 228° 48′; near end of wall of bridge on the Kolhāpur road 327° 26′; 364½ feet.

No. XLI Manmad

° ′ ″
λ 20 14 40 N.
L 74 26 30 E.
Sheet 46 L.

About one mile SE. of the Railway Station: it is situated on the east bank of the Satai nallah and is 400 yards due east of the Public Works Department Inspection Bungalow which is on the road from Manmād to Yeola. A disused well is about 40 yards to the SSW. The site is in the village lands of Manmād, Subdivision Chandor, District Nasik, Bombay Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and half a foot above it. The true bearings to surrounding objects are:—West gable end of gatekeeper's house on metre gauge railway 57° 35′; disused masonry well 204° 50′; needle pointed hill 235° 3′; chimney of out office of the P.W.D. Inspection bungalow 271° 58′; east gable end of the P.W.D. Inspection bungalow 276° 10′.

No. XLII Delhi

° ′ ″
λ 28 40 15 N.
L 77 13 48 E.
Sheet 53 H.

In the Khudsia gardens on the edge of a grassy plot, about 300 yards east of the main gate and 67 feet south of the south-eastern corner of an old archway. The main road to the garden, which branches off from the Alipur Road in front of Curzon House, passes through this archway. A big *Jammun* tree is 44 feet to the north and is almost in line with the south-east corner of the archway. The site is in the notified area of Delhi, District and Province Delhi. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Flag-staff 242° 37′; well 283° 26′, 176 feet; south-eastern corner of wall of old archway 350° 56′, 67 feet.

No. XLIII Sirsa

° ′ ″
λ 29 32 10 N.
L 75 2 40 E.
Sheet 44 O.

On a mound, around which the lands are cultivated, about 200 yards east-north-east of the Railway Officer's rest-house and Engineer's office. The site is on Government lands in the Sub-division of Sirsa, District Hissār, Punjab. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—North-east corner of Assistant Commissioner's court 165° 4′; central chimney of Railway Officers' rest-house and Engineer's office 252° 14′; stone pillar of railway fence 287° 44′; gate at railway fence 354 feet 4 inches; flag-staff on Volunteer butts 337° 27′.

No. XLIV Tinnevelly

° ′ ″
λ 8 44 0 N.
L 77 42 30 E.
Sheet 58 H.

At the western end of an elevated strip of land on which are many palmyra trees, about 300 yards north-west of Tinnevelly Bridge Railway Station. The site is in the village lands of Sindhupundurai, Sub-division and District Tinnevelly, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings of surrounding objects are:—Western chimney of Sugar mill 20° 2′; eastern chimney of Sugar Mill 41° 28′; Burma Oil Company's tank 141° 41′; east end of Post and Telegraph Office 189° 45′; stone pillar of well in rice fields 241° 52′; middle of largest temple in Tinnevelly 257° 26′.

No. XLV Mandapam

° ′ ″
λ 9 16 50 N.
L 79 8 30 E.
Sheet 58 O.

West-south-west of Mandapam Railway Station and 698 feet north-east of Mandap shrine on the beach. The site is in the village lands of Mandapam, Sub-division and District Rāmnād, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Muhammad Mehdīn Chini's house 5° 39′; west gable end of Railway Station 63° 47′; Marine pillar at end of Pamban island 143° 58′; north-eastern corner of Mandap shrine 227° 12′; 698 feet.

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No XLVI Tanjore

° ′ ″
λ 10 46 40 N.
L 79 8 20 E.
Sheet 58 N.

On rocky waste land about 350 yards south-west of the Tanjore Club. The site is in the private lands of the Tanjore Raja's family, Town survey No. 2852, Sub-division and District Tanjore, Madras Presidency. The station is marked by a concrete pillar 2 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 1½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are :— Dome of Tanjore Club 28° 41′; north-west corner of Mr. Strinivasam Pillay's house 52° 2′; spire of Roman Catholic Church 93° 30′; north-western corner of compound wall 130° 52′; north-eastern corner of Railway District Engineer's bungalow 227° 32′; stone pillar to the north near road 417 feet 10 inches; stone pillar to the south-east 271 feet 4 inches.

No. XLVII Parbhani

° ″
λ 19 15 20 N.
L 76 46 50 E.
Sheet 56 A.

On the southern half of the large open plain north of Signor Walchi's Cotton Mills, about 200 yards north-east of the Travellers' Bungalow and 61 yards north of the boundary drain of the mill compound. The site is in the village lands of Parbhani, Sub-division and District Parbhani, Hyderābād-Deccan. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are :— North-west end of near culvert to the east, on cart road, 90° 22′, 565 feet 3 inches; south-west gable end of Missionary doctor's house 112° 3′; chimney of Signor Walchi's Cotton Mill 186° 47′; south-eastern corner of Travellers' Bungalow 247° 47′; south gable end of cotton broker's office 285° 46′; south-east pinnacle of *masjid* in Parbhani Town 321° 48′.

No. XLVIII Bezwada

° ′ ″
λ 16 31 0 N.
L 80 36 50 E.
Sheet 65 D.

On the high south bank of the Yēlur canal, about 1½ furlongs north-east of the Canal Road bridge on the road from the Railway station to Governorpet and about 200 yards east by south of Purna Nandam's Rice Mill. The site is on the canal lands of the Kistna Public Works Department, Central Division, field No. 1526 B of the Land Settlement Survey, Bezwāda *taluka*, Kistna District, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings of surrounding objects are :— Centre of temple 55° 58′; north gable end of Barrister's house 159° 30′; gable end of porch of Munsif's Court 203° 40′; chimney of Purna Nandam's Rice Mill 283° 53′; south-west gable end of broad gauge railway locomotive shed 333° 36′.

No. XLIX Manikpur

° ′ ″
λ 25 3 10 N.
L 81 5 20 E.
Sheet 63 G.

About 500 yards south of the railway station, on a slight eminence on grassy land. The site is in the village lands of Mānikpur, *tahsīl* Karwi, District Bānda, U.P. of Agra and Oudh. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are :—Far distant railway west semaphore signal 286° 44′; south gable end of roof of Permanent Way Inspector's Bungalow 339° 9′; railway water tank 354°38′; south-western corner of new Police quarters 60° 26′; distant hill-top 118° 42′.

No. L Monghyr

° ′ ″
λ 25 23 10 N.
L 86 27 50 E.
Sheet 72 K.

Inside the Monghyr Fort, east of a water tank which is passed on entering the Fort gate nearest to the railway station. It is on a grassy plot of low land between the road running along the eastern edge of the tank and the high ground on which the Rājā's building is situated. The site is in the town lands of Monghyr, District Monghyr, Behār and Orissa. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and half a foot above it. The true bearings and distances of surrounding objects are :—Culvert on road close to the water tank 251° 46′, 101 feet; culvert on road to the north 332° 17′, 167 feet 9 inches; north-western corner of Rājā's building on hillock 45° 52′; centre of fenced-in well 139° 37′, 234½ feet.

No. LI Sini

° ′ ″
λ 22 47 0 N.
L 85 56 50 E.
Sheet 73 F.

On slightly elevated ground about 100 yards by 50 yards in area, 500 yards south of the Railway Station and 300 yards west of the village of Kamalpur. The site is in the Saraikala State, Singbhum District, Behār and Orissa. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription

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"G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—Railway gate keeper's hut 317° 33′; west gable end of Railway Station 353° 53′; railway water tank 9° 37′; centre of rocks near village 79° 17′.

No. LII Katarnian Ghat

° ′ ″
λ 28 19 50 N.
L 81 7 50 E.
Sheet 62 H

About 400 yards south-west of the Railway station and 312 yards SW. by S. of the south-western corner of the Post Office. The site is in forest land, Bahraich District, U.P. of Agra and Oudh. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". About 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—South-western corner of the Railway Rest House 73° 14′; south-western corner of the Post Office 38° 1′; 937 feet 6 inches; north-western corner of Railway Station 47° 55′.

No. LIII Bettiah

° ′ ″
λ 20 48 50 N.
L 84 31 30 E.
Sheet 72 B.

On a small patch of uncultivated ground, about 300 yards to the north of the Railway engine shed, near the north-west corner of a football ground and about 180 yards south-west of the south-western corner of the compound wall of the Roman Catholic Convent. The site is in the village lands of Bano Chapra, sub-division Bettiah, District Champaran, Behār and Orissa. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—West gable end of engine shed 193° 58′; north-eastern corner of culvert on road 204° 22′, 485 feet 9 inches; west pillar of gate at southern entrance to Convent 69° 38′.

No. LIV Baran

° ′ ″
λ 25 5 32 N.
L 76 30 30 E.
Sheet 54 C.

The station is to the west of and just outside the town of Bāran, NNW. of the Railway station and 300 yards north-west of a retired opium agent's house. The road from Bāran to Kotah is about 125 yards to the north of the site. It is in the village lands of Bāran, sub-division Bāran, Kotah State, Rajputana. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—Chimney of permanent way inspector's bungalow 185° 29′; west distant Railway Semaphore signal 272° 10′; centre of *masjid* 25° 1′; south-western corner of Opium Agent's bungalow 126° 11′; west gable end of Bāran Railway Station 164° 37′.

No. LV Bina

° ′ ″
λ 24 10 50 N.
L 78 11 0 E.
Sheet 54 L.

In a field north-west of the Railway station, about 500 yards south-west of the Volunteer butts. The site is in the village lands of Pali (Sabda), tahsīl Khurai, District Saugor, Central Provinces. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—Flag-staff at Volunteer butts 39° 33′, 500 yards; northern water tank of Railway 94° 35′; zinc latrine 159° 19′; south distant Railway cabin 203° 40′.

No. LVI Indore

° ′ ″
λ 22 42 8 N.
L 75 52 40 E.
Sheet 46 N.

At the north end of a large recreation ground, close to a group of tamarind trees about 200 yards south of the old Daly College and 75 feet east of the road to the Residency. The site is in the lands of the Residency, sub-division and State Indore, Central India. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of the surrounding objects are:—Church steeple 69° 57′; water tank 154° 47′; north gable end of the Bank of Bombay 239° 26′; gable end of beef shop 289° 2′, 580 feet; largest spire of Daly College 354° 16′; south-western corner of wall enclosure of Church 571 feet 2 inches.

No. LVII Cawnpore

° ′ ″
λ 26 27 0 N.
L 80 21 0 E.
Sheet 63 B.

About two furlongs south-east of the East Indian Railway station, in an open *maidān* bounded by the Hardinge road on the north and Delhi-Allahābād road on the west. The site is in the Cantonment lands of Cawnpore, Cawnpore District, United Provinces of Agra and Oudh. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S.

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Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Corner of a mud wall 326° 37′; pillar marked "Faithfulgunge 28" 10° 31′, 65 feet; big banyan tree inside the wall of a compound 87° 7′; the southern and taller one of two factory chimneys 298° 56′; Hardinge road, in the direction of the corner of the mud wall, measures 192 yards.

No. LVIII Kathgodam

λ 29° 15′ 19″ N.
L 79 32 50 E.
Sheet 53 O.

East of the Railway Station, 43 feet east of the edge of the eastern bank of the Gola river and 454 feet south-south-east of a masonry hut for coolies. The site is in the Haldwani tahsīl, District Naini Tāl, United Provinces of Agra and Oudh. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—Southernmost peak of a range of hills 250° 41′; single large tree on peak 279° 22′; north gable end of Railway Goods-shed 304° 12′; south-western edge of the masonry hut for coolies 336° 36′.

No. LIX Balasore

λ 21° 30′ 30″ N.
L 86 54 40 E.
Sheet 73 K.

North of the Railway station, west of the cemetery, south of the Mission house and on the grass plot between the two roads which meet near the entrance to the Railway grounds. The site is in plot No. 348 of the village of Sahdeb Khunta, District Balasore, Behar and Orissa. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—Gate of the American Mission House 2° 16′; north-eastern gate pillar of cemetery 73° 22′; north-eastern Railway water tank 95° 52′; south-western gate pillar of cemetery 133° 12′.

No. LX Berhampur (Ganjam)

λ 19° 18′ 10″ N.
L 84 48 40 E.
Sheet 74 A.

On an open piece of ground 2½ furlongs north-west of the Railway station and west of the main road from the Railway station to the town. The site is in the village lands of Bijjipur, tahsīl and District Berhampur, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Culvert on the road from the Railway station to the town 125° 47′, 500 feet; masonry pillar 66° 42′; octroi house 341° 45′; south-eastern corner of cemetery 300° 40′, 449 feet.

No. LXI Cumbum

λ 15° 35′ 50″ N.
L 79 6 40 E.
Sheet 57 M.

On the cultivated land between the roads from Jungamguntla and Guntur and about 300 yards north by east of the Forest Rest House. The site is in the village lands of Kandulapuram, tāluk Cumbum, District Kurnool, Madras Presidency. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of the surrounding objects are:—Gate keeper's cabin at Railway level crossing 3° 50′; furlong-stone marked "2" on the road from Cumbum to Gunter 114° 50′, 311 feet 4 inches; north-western corner of wall enclosure of temple 167° 21′, 346 feet 1 inch; east end of roof of Forest Rest House, 194° 33′; north-east end of the Public Works Department Rest House 223° 39′; telegraph post 298° 31′, 102 feet 8 inches.

No. LXII Chanda

λ 19° 57′ 50″ N.
L 79 17 40 E.
Sheet 56 M.

North of the Divisional Forest Office (Northern Range) and 48 yards north of the road from Chānda to Mūl village. The site is in the village lands of Dewai, sub-division and District Chānda, Central Provinces. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—North-west end of the verandah of the Chānda Divisional Forest Office 177° 32′; gable end of porch of Forest Officer's bungalow 195° 52′; north gable end of elephant shed 263° 47′; north-eastern corner of the Forest Office compound 149° 25′.

No. LXIII Raipur

λ 21° 15′ 50″ N.
L 81 38 20 E.
Sheet 64 G.

On the piece of ground which is bounded on the west by the Bengal-Nāgpur Railway, on the south by the Dhamtari Light Railway and on the east by the Raipur-Bilāspur road: it is close to the road and about 136 feet west of stone marked "B" on the near side of the road opposite to the furlong-stone marked "3". The site is in the village lands of Phaperdih, tahsīl and District Raipur, Central

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Provinces. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Signal on Railway Bridge 245° 7′; white temple 284° 23′; distant temple 105° 27′; stone on Raipur-Bilāspur Road marked "B" 94° 5′, 136 feet.

No. LXIV Amraoti

λ 20° 55′ 30″ N.
L 77° 45′ 50″ E.
Sheet 55 H.

On a large piece of cultivated land south of the Roman Catholic Church, south by east of the Mahomedan hostel and 734½ feet north of a single masonry tomb. The site is in the village lands of Rajapet, sub-division and District Amraoti, Central Provinces. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Belfry of Roman Catholic Church 3° 47′; single tree on Māl Tekri (hill) 53° 0′; gable end of masonry house in Fraserpura village 101° 31′; single masonry tomb 183° 3′, 734½ feet; Railway water tank 303° 41′; east gable end of a pleader's bungalow 329° 43′.

No. LXV Santahar

λ 24° 48′ 10″ N.
L 88° 59′ 20″ E.
Sheet 78 D.

On the south-east corner of the *bund* of a small tank about 4½ furlongs south east of the Santahar Railway station and almost east of the higher of two Railway water tanks which are situated about 2½ furlongs to the south of the Railway station. The site is in the village lands of Kolsa, thana Adamdighi, District Bogra, Bengal. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—North gable end of an isolated tin roofed house 122° 54′, 224¾ feet; single mango tree 242° 32′, 294¼ feet; water tank 273° 48′.

No. LXVI Laksham

λ 23° 15′ 40″ N.
L 91° 7′ 20″ E.
Sheet 79 M.

About 300 yards to the south-west of the Railway station, on the north-eastern corner of the embankment of a tank. The site is in the village lands of Nasaratpur, thana Lāksham, District Tippera, Bengal. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—North-east corner of Masjid 199° 37′; north water tank 33° 57′; water-pipe pillar on road 59° 12′; south water tank 86° 58′.

No. LXVII Mandalay

λ 22° 0′ 13″ N.
L 96° 5′ 58″ E.
Sheet 93 B.

On a piece of waste land west of the road from the palace to the north gate of Dufferin Fort, about 90 yards from the road and 300 yards south-south-west of the Fort gate and close to the western limit of a line of tamarind trees. The site is in the land of Fort Dufferin, District Mandalay, Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—Spire of north gate of Fort 22° 5′; white pagoda on top of Mandalay hill 35° 51′; north gable end of Executive Engineer's office 184° 38′; incinerator chimney 247° 12′; spire on Fort wall 346° 3′.

No. LXVIII Myitkyina

λ 25° 23′ 20″ N.
L 97° 24′ 10″ E.
Sheet 92 G.

At the south end of a large grassy plain, about 300 yards south-west of the Court-House and 50 yards north of the main road. The site is in the town lands of Myitkyinā, sub-division, and District Myitkyinā, Upper Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings to surrounding objects are:—Flag-staff 5° 58′; south lower gable end of Court-House 51° 4′; west gable end of Telegraph Office 103° 23′; Railway station signal 186° 11′.

No. LXIX Bhamo

λ 24° 15′ 30″ N.
L 97° 13′ 10″ E.
Sheet 92 H.

About ½ mile north-east of the Fort, south-south-east of the Custom House and about 300 yards south of the Cantonment boundary pillar No. 3 which is near the main road to China. The site is in the town lands of Bhamo, sub-division and District Bhamo, Upper Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Top centre of Custom House (a double-storied

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building) 344° 2′; pagoda spire 293° 25′; Cantonment boundary pillar No. 3, 12° 40′; the nearer of two teak trees almost in line 122° 53′.

No. LXX Prome

λ 18° 49′ 40″ N.
L 95 13 20 E.
Sheet 85 N.

About ½ a mile north of the Railway station, on a piece of open ground north of the school building and near a group of tamarind trees. The site is in the town lands of Prome, sub-division and District Prome, Lower Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station." 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are:—Culvert 70° 51′; white pagoda on *maidān* 125° 47′; pagoda on hill 162° 41′; golden pagoda and east gable end of a house 188° 39′; pagoda on hill beyond river 206° 14′; bend of roads 270° 21′, 215 feet; crossing of two roads 253 feet.

No. LXXI Bassein

λ 16° 46′ 20″ N.
L 94 44 30 E.
Sheet 85 L.

About 400 yards south-west of the Railway station, on the south-west corner of a tank from which water is pumped up for the Railway engines. The site is within Railway grounds, District Bassein, Lower Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings of surrounding objects are:—Iron reservoir and pumping engine (nearly in a line) 15° 15′; pagoda 102° 52′; golden top of Phungyi Kyaung in town 284° 37′; inlet to tank 329° 17′.

No. LXXII Moulmein

λ 16° 29′ 40″ N.
L 97 37 30 E.
Sheet 94 H.

On the race course *maidān*, east by south of the winning post and about 400 yards north of the Jail. The road from the Jail is about 150 yards to the east of the site. It is in the town lands of Moulmein, sub-division Moulmein, District Amherst, Lower Burma. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings of surrounding objects are:—Centre gable end of Mr. Subramania Pillay's house 68° 13′; golden pagoda on hill 140° 47′; north culvert on road 185° 2′; northern minaret of mosque 235° 48′; winning post at the Race Course pavilion 284° 49′.

No. LXXIII Barmer

λ 25° 44′ 35″ N.
L 71 26 40 E.
Sheet 40 O.

About 400 yards south-east of the Railway station and 260 yards north-east of the loco. foreman's bungalow. The site is in the village lands of Bārmer, Sub-division Bārmer, Jodhpur State, Rajputana. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The true bearings and distances of surrounding objects are :—Chimney of the loco. foreman's bungalow 234° 14′, and east corner of the bungalow verandah, 776 feet; old temple on hill top 276° 58′; south-eastern corner of out office 280° 40′, 865 feet; south-eastern corner of Post Office 287° 47′; north semaphore signal 322° 43′.

No. LXXIV Barrackpore

λ 22° 46′ 29″ N.
L 88 21 39 E.
Sheet 79 B.

At the north-eastern end of the Barrackpore Cantonment, about 500 yards north-north-west of the north end of the Orderly Bazar, 250 yards south-west of the junction of the Orderly Bazar road and Jafferpore road, 147 yards south-east of the Supply and Transport slaughter house and 190 yards south of Cantonment Boundary pillar, No. 31. A long tank running north and south lies about 60 yards to the east of the site. The Barrackpore Magnetic Observatory, which was closed in 1915, occupied a position 65 yards due north of the site. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and ½ foot above it. The site is in the Barrackpore Cantonment, sub-division Barrackpore, District 24-Pargannas, Bengal.

No. LXXV Galle, (Ceylon)

λ 6° 1′ 47″ N.
L 80 12 17 E.
Sheet 68 B.

About 220 yards almost due south of the race course pavilion and situated on the lower rampart of Galle fort, on the west side and inner corner of the "Sun Bastion". The NW. corner of the rampart wall, in the direction of the pavilion, is 74 feet from this site and the distance along the rampart, westwards, up to the near end of the north-gateway of the fort, is 165 feet. The site is marked by a stone embedded in the rampart: the stone is 18 inches in length, 6 inches square at the base and tapering to 4 inches at the top; the upper surface, on which an arrow and dot are cut, is 1 foot below the surface of the rampart. The stone is a permanent traverse mark of the Ceylon Survey Department and is known as the "Land mark picket"

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and designated by the letter A on the Survey plan of the fort. The exact position of the site is the dot at the head of the arrow cut on the top of the stone (↑). The true bearings of conspicuous objects are:—The largest cross on the Roman Catholic church 324° 15′ 53″; cross on the dome of the Roman Catholic Church 325° 48′ 36″; spike on the west side of the top of the roof of the grand stand 351° 28′ 42″; pivot of the hands of the clock on the clock tower in the fort 255° 55′ 50″; apex of the meteorological observatory shed 259° 21′ 11″.

No. LXXVI Phulchari

λ 25 11 20 N.
L 89 38 30 E.
Sheet 78 G.

On the cremation grounds of Baji Phulchari and near the bank of a little stream east of this village. The Phulchari Railway Station is about 400 yards to the south-south-east. The site is in the village lands of Baji Phulchari, Sub-division Gaibhanda, District Rangpur, Bengal. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and half a foot above it. The true bearings to surrounding objects are:—Large silk-cotton (Semul) tree between the school and railway station 111° 20′; western gable end of the railway station 150° 30′; railway level-crossing 209° 15′ (rough); Semul tree 259° 45′.

No. LXXVII Palasbari

λ 26 7 40 N.
L 91 32 40 E.
Sheet 78 N.

On cultivated land, about ¼ mile south of the Palāsbāri Inspection Bungalow, 200 yards north of Udyampur village and 100 yards east of the Gauhati-Chhoygaon road. The site is in the village lands of Palasbari, District Kamrup, Assam. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic station" 2½ feet of the pillar is below the surface of the ground and half a foot above it.

No. LXXVIII Kalaw

λ 20 37 40 N.
L 96 34 10 E.
Sheet 93 D.

On a low hillock about 650 yards south-west of the Railway Station and about 250 yards south of the junction of "Station Road", "Central Road" and "Douglas Road"—a foot-path from the tri-junction passes by the foot of the hillock. A temple on the hillock bears 77° 40′ and is 35 yards from the site. The site is in the town lands of Kalaw, Sub-division Kalaw, District Southern Shan States'. The station is marked by a concrete pillar 3 feet × 1 foot × 1 foot, bearing on its surface the inscription "G.T.S. Magnetic Station". 2½ feet of the pillar is below the surface of the ground and half a foot above it. The true bearings to surrounding objects are:—Culvert near junction of roads 3° 48′; junction of roads 14° 13′; Gurudwara Staff 18° 13′; south chimney of Railway Station 48° 18′. Railway signal 68° 58′; top of pagoda 77° 53′; centre of large culvert on "Central Road" 211° 23′.

No. LXXIX Kindat

λ 23 44 10 N.
L 94 26 0 E.
Sheet 84 I.

East of the Inspection Bungalow, old Court House and the Public Works Department Sub-divisional Office. A distance of 130 paces measured north-wards from the SE. corner of the large embankment and 18 paces measured thence, westwards, marks the site. The site is in the village lands of Kindat, Upper Chindwin District, Chindwin Division, Upper Burma. The station is marked by a masonry pillar 3 feet × 1½ feet × 1½ feet, bearing the inscription $\frac{\text{G.T.S.}}{\text{M.S.}}$ engraved on its upper surface. 2½ feet of the pillar is below the ground level and half a foot above it. The bearings and distances to surrounding objects are:—The further of two fig trees 13° 10″, distance 150 paces; telegraph post at the south-east corner of the embankment 189° 35′; small white pagoda 261° 0′; top of old circuit house 294° 5′; centre of gable end of old Court House 305° 10′; the nearer of two fig trees 356° 50′, distance 92 paces.

No. LXXX Victoria Point

λ 9 59 0 N.
L 98 35 20 E.
Sheet 96 K.

North-east of the village of Victoria Point, on the highest part of the upland overlooking the village. Three large trees to the south, west and west-north-west are 72, 158 and 167 feet distant respectively, measured along the slope of the ground. The site is in the village lands of Victoria Point, Sub-division Victoria Point, District Mergui, Lower Burma. The station is marked by a concrete pillar 2½ feet in length and 15 inches in diameter. 2 feet of the pillar is below the ground level and 4 inches above it. The bearings and distances to surrounding objects are:—End of jetty 182° 38′; crown of roof of police station 195° 27′; flag staff at police station 196° 56′; spire of the Sub-divisional officer's house 235° 18′; western wireless telegraph post 296° 54′; anemometer tower 297° 53′; eastern wireless telegraph post 299° 13′.

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REPORT OF THE GOVERNMENT COMMITTEE ON THE MAGNETIC SURVEY OF INDIA.

At the suggestion of the Surveyor-General, a Committee was assembled by the Government of India in March 1914 to consider the present position of the Magnetic Survey and advise as to the steps to be taken to complete it.

The Committee consisted of :

President.

Dr. G.T. WALKER, C.S.I., Sc. D., F.R.S.

Members.

CAPTAIN R.H. THOMAS, R.E.

Mr. J. DE GRAAFF HUNTER, M.A.

The conclusions arrived at are contained in the following pages.

The matters discussed by the Committee may be conveniently divided as follows:—

1. Methods of reduction—
   (*a*) Corrections for diurnal variation.
   (*b*) „ „ secular variation.
2. What elements should be published?
3. Selection of Epoch.
4. Whether the field work of the first general magnetic survey is complete.
5. Whether regional disturbances should be tabulated, and if so, by what method.
6. What detailed magnetic surveys are now desirable?
7. The interpretation of regional disturbances in relation to geophysical features.
8. The length of time before the results of the present survey can be published.
9. How long should Government maintain—
   (*a*) base stations,
   (*b*) repeat stations?

   At what date should the second general magnetic survey be commenced?
10. The desirability of another comparison of the absolute instruments with Europe.

1. *The methods of reduction.*

It is usually assumed that the method of reduction of field observations consists in applying three corrections :—

(*a*) for normal diurnal variation.
(*b*) for short lived disturbances.
(*c*) for secular variation.

For the purposes of the survey, in order to save computing, it has been until 1912 the practice to derive the average diurnal variation of each month from five quiet days selected in such a manner that their "centre of mean position" coincides closely with the middle day of the month. The means of the readings derived from the magnetographs on the quiet days at the hours 0, 1, 2, 3,.....22, 23 are tabulated and their mean is taken as the mean value for the month, while the departure from this mean of the values at the hours 0, 1, 2,.....22, 23 are taken as giving the normal daily variation for the middle of the month: at other times the daily variations are obtained by interpolation between the values of two successive means. The diurnal variation at a place is a function of the local time there, and when applying the correction for diurnal variation to an observation at a field station at a definite hour by local time the obvious way of deriving it is by interpolation from the values of the nearest observatories each at the same local time.

In order to calculate the disturbance (*b*) at any time the undisturbed value has first to be calculated. This is derived from the mean of the month by applying the diurnal variation appropriate to the date, and the difference from this hypothetical undisturbed value is taken as the disturbance. It will be noticed that in this method of procedure any change produced by secular change between the day in question and the middle of the month has been included in the disturbance.

It is generally supposed that since big disturbances occur almost simultaneously over the earth, the smaller disturbances, that are shown on days which are quiet enough for reliable field work, also occur simultaneously over India, and the obvious way to correct for them at a field station is to interpolate between the disturbances occuring simultaneously at the observatories. It is however not certain that a part of the disturbance is not a function of local time.

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The correction (c) for secular variation reduces the observation from the date on which it is made to the epoch selected.

It has frequently been assumed that this correction is strictly proportional to the length of time involved, but in India this assumption is not justified. The inequalities caused by annual variation and by irregularities may together amount to as much as 1′·3 in Declination, 45γ in Horizontal Force, and 8′ in Dip; such quantities are too large to be ignored.

If the monthly means of an element at the different observatories are plotted it will be seen that disturbances extending over one or two months affect the whole country by roughly similar amounts, and that this applies to a less extent to disturbances lasting over several years*. Thus in each case, if the value at a field station is wanted, interpolation is inevitable.

The plotted monthly means of the observatories for each element lie fairly closely upon a pair of straight lines extending from 1903·0 to 1909·0 and 1909·0 to 1914·0 respectively. For the repeat stations† similar pairs of lines have been drawn and the annual change for each of the two periods plotted on a map of India. The consistency on the map is fairly good and the rate of secular change for a field station can be derived with an accuracy which will be discussed later on.

Thus in order to reduce from the value of an element observed at a field station to its value at the epoch we have to apply corrections for normal diurnal variation, disturbance, and for uniform secular variation, on which are superposed irregularities of one or two months, as well as irregularities of several years.

Of these five corrections that for uniform secular change can scarcely be modified; but the question arises whether the remaining four cannot be simplified, and an affirmative reply seems possible.

Let us consider a field observation, say of declination, at a particular hour on a particular day, and suppose that we have the corresponding magnetograph curve of declination at one of the observatories. Let us subtract the declination at the hour in question as tabulated from the chart from the value at the middle of the month on the chart of uniform secular variation for that observatory. This difference is the correction that has to be applied to the value at the observatory at the hour of the field observation in order to give the value at the middle of the month; and if corresponding differences be tabulated for all the observatories the value to be applied at the field station may be obtained by interpolation. That this is so follows from the fact that the difference is made up of four parts which can each be obtained by interpolation. It may be objected that interpolation cannot be effected by the same process for normal diurnal variation and also for disturbance, inasmuch as the first has to be interpolated from observatory values at the same local time and the second at the same absolute time. It is easily seen however that if the disturbance causes no marked discontinuities in the curve the error introduced by interpolation at the same local hour is very small, while if there are marked discontinuities the field observations are of doubtful value; and it may also be verified that if the interpolation be made from simultaneous readings at the observatories the error introduced into the normal diurnal variation is very slight**. The latter method of interpolation seems on the whole more satisfactory and has been adopted. In practice it seems better instead of effecting the interpolations by assuming a different weighting of the observatories for each field station to divide the country into areas over each of which the corrections may be treated as constant, the areas‡ being sufficiently numerous to make certain that the error in the correction at places on its boundary shall not be too large.

Declination. In declination, the correction for normal daily variation will not exceed 4′; and the correction interpolated in the ordinary manner from the base stations can at the same local time be relied on to 0′·2 while if the 14 areas be used the maximum error is 0′·3, the average being 0′·15. Practically no irregular disturbances are big enough to cause the rejection of observations; the error introduced is never more than 0′·5 and is in general about 0′·3. It appears that the annual secular changes can be derived to within an average accuracy of about 0′·25 per annum in the first period (1903·0 to 1909·0) and 0′·3 in the

* Such disturbances might also be called irregularities in the march of secular variation.

† Any field station at which several observations have been made should also be utilised.

** Its value is shown in the following table:—

	Average	Extreme
Declination	0′·1	0′·2
Horizontal Force	1γ	2γ
Dip	0′·1	0′·2

‡ On the information before us we would suggest 14 areas as indicated on the sketch map appended.

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second period (1909·0 to 1914·0), the extreme errors being probably 0′·4 and 0′·5 respectively; thus the average error in the average period for which the correction has to be applied is about 1′·0 and the maximum error in the longest period 2′·4. The error due to interpolating for the departure of the curve of secular change from a straight line is estimated at 0′·3 on the average and 1′·0 in the outer limit. The value of declination for a particular station at the epoch is thus affected by errors of the following approximate amounts:—

	Average	Extreme
Of observation	0′·2	0′·3
Reduction for diurnal variation*	0′·2	0′·5
Reduction for disturbance*	0′·3	0′·5
Reduction for secular variation:—		
(1) from error in annual change... ...	1′·0	2′·4
(2) from departure of the curve of secular change from straight line ...	0′·3	1·0
Final Value	1′·1	4′·7

Horizontal Force. In horizontal force, the biggest correction for normal daily variation in years of maximum sunspots, may be taken as varying from 20γ in Northern India to 95γ in Southern India; and the correction interpolated from the base station at the same local time can probably in the worst cases be relied upon to 20γ while in general the error will be materially less. The corrections for disturbance are of practically the same accuracy. The secular variation in a year can be estimated from the charts with an average error of about 2γ and an extreme error of about 4γ.

The value of Horizontal Force for a particular station at the epoch is thus affected by errors of the following amounts†:—

	Average	Extreme
Of observation	5γ	12γ
Reduction for diurnal variation	5γ	22γ
Reduction for disturbances	5γ	20γ
Reduction for secular variation:—		
(1) from error in annual change	6γ	25γ
(2) from departure of the curve of secular change from a straight line	4γ	10γ
Final Value ...	12γ	89γ

Dip. In dip the average and extreme errors of observation may be taken as 1′·0 and 3′·0; the largest correction for normal daily variation is 3′·0 and the correction interpolated from the base stations can be relied upon to 0′·2 in the worst cases or 0′·1 on the average.

In secular variation the same method has been adopted as for declination, the curve for the variation being replaced with sufficient accuracy by two straight lines meeting at 1909. The errors involved‡ are shown on the following table:—

	Average	Extreme
Of observation	1′·0	3′·0
Reduction for diurnal variation	0′·1	0′·4
Reduction for disturbance	0′·2	0′·5
Reduction for secular variation:—		
(1) from error in annual change	1′·0	3′·5
(2) from departure of the curve of secular change from a straight line	0′·5	1′·7
Final value	1′·5	9′·1

For the purpose of reducing field observations to a fixed epoch we have given a method of dealing with all corrections which arise by means of interpolation and have also made estimates of the average and extreme errors which may be introduced by the application of this method. The corrections involved, apart from those for secular variation, may be considered small in relation to station error: but as these have all been dealt with together, it appears that the full correction involves no more labour than a portion of it: the method is justified unless the magnitude of the full correction is too small.

* Assuming 14 areas.

† These figures are provisional in as much as the data on which they are based are in general not corrected for disturbances at the time of observation; thus they provide outside limits for the errors.

‡ The data have not as yet been corrected at all; hence the above errors are probably in excess of what will ultimately be found correct.

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In order to examine this it is only necessary to take the maximum corrections given by the observatories during the ordinary working hours (7-18) and months (November-May) at a time of maximum sunspots.

Diurnal Variation.

	Dehra Dun	Barrackpore	Kodaikanal	Toungoo
Declination	3′·8	3′·3	1′·8	2′·4
H.F.	23γ	40γ	92γ	46γ
Dip*	2′·3	2′·5	2′·7	2′·5

The magnitude of storms which are not sufficiently great to cause the rejection of observations may be taken as much the same as that of the diurnal changes indicated above; and hence the total correction under examination may be taken as having maximum values in declination of about 8′, in horizontal force 180γ and in dip 6′. It appears to us that these magnitudes are so large in comparison with those that may arise from secular variation that the method proposed should be followed in full.

We are of opinion that Declination and Dip should be published to the nearest minute and Horizontal Force to the nearest 10γ.

2. What elements should be published?

We think that at the field stations, Declination, Horizontal Force, and Dip should be published, as corrected for the date and also as corrected to the Epoch. In the latter case the rectangular components also should be published, because of their convenience for purposes of investigation. The charts should give Declination, Horizontal Force, Dip, and the three rectangular components.

We also think that the tables and charts of the monthly mean values of the various elements at the observatories should be published.

3. The Selection of the Epoch.

We consider that 1st January 1909 should be adopted as the Epoch, one reason being that this date gives the least value for the extreme errors of the magnetic elements, and another that this is the natural meeting point of the two lines which give the best approximation to the curves of secular change.

4. Whether the field work of the first general magnetic survey is complete.

The number of the field stations that have been occupied bears a satisfactorily large ratio to the area of India, and their distribution appears good over all accessible parts of the country. In estimating the quality of the work we have to consider that at the observatories and that in the field: the former appears to have been quite satisfactory. As secular corrections have not yet been worked out the opinion of the Committee regarding the field work must depend on the series of observations at the repeat stations, as examined for their secular variations. The only element for which these have been fully corrected is declination, and it is thus only from declination observations that an opinion can be formed. The impression left by these is that the field work also has been quite satisfactory.

We are therefore of opinion that unless the work in horizontal force or dip proves, for some reason of which there is at present no indication, to be less good than that in declination; the field work of the first general magnetic survey is complete.

5. Whether regional disturbances should be tabulated, and if so, by what method.

We are of opinion that the publication of the data as recommended in 2 will render all the essential facts accessible to investigators; and it seems likely that some years may elapse before this can be effected. Hence as the computation and discussion of disturbances would probably take at least a year and any unnecessary delay in publication is greatly to be deprecated, we think that the disturbances might be published later as a supplementary piece of research work.

It appears from a preliminary examination that terrestrial lines produced by a formula of the type $a + bl + c\lambda$ would be satisfactory; the labour involved would not be very large and could be undertaken by an officer who might be in charge of the base stations and of any observations at repeat stations that might be made for the purpose of keeping the survey up to date.

6. What detailed magnetic surveys are now desirable..

It appears to us open to question whether the detailed magnetic surveys carried out hitherto have proved worth their cost in time and money†; and in the case of India we think it likely that while the economic value would be small, the scientific value would not be

* The dip observations are for 1908-9, the first year for which observations are available.

† In the case of Great Britain experience showed that the information regarding regional disturbances derived from a survey of 205 stations agreed in its 'delineation of the principal magnetic features' with that from a survey of 677 stations.

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large enough to justify the expenditure of money that is much needed for other scientific purposes. In any case however it will not be possible to cosider in what part of India intense or widespread disturbances are found until the charts of the elements have been prepared.

7. *The interpretation of regional disturbances in relation to geophysical features.*

The importance of a disturbance is probably limited to its geological or geodetic effects; and should it be decided to compute and publish the details of Indian disturbances it would presumably be desirable to arrange for the discussion to be carried out in collaboration with specialists in these subjects.

8. *The length of time before the results of the present survey can be published.*

We are of opinion that in spite of simplifications in the methods of reduction it cannot be expected that without an increase in the staff publication will be completed in less than three years from now. In view of the fact that the survey was begun in 1902 we think that, if any arrangement can without difficulty be made for accelerating the final work, this is desirable.

9. *How long should Government maintain* (*a*) *base stations*, (*b*) *repeat stations*? *At what date should the second general magnetic survey be commenced*?

The practice of other countries in regard to the repetition of surveys is extremely variable. In Great Britian the Survey is to be brought up to date after 23 years; in the United States revisions after 5 or 10 years are at present regarded as desirable; but in France, Holland, South Africa, Japan and the Dutch East Indies it does not appear that a second survey has been carried out although in two cases intervals of 23 and 19 years have elapsed.

In the case of India it appears to us that economic considerations play extremely little part in this matter, and that it is for the sake of science alone that the survey will be repeated. Now for most theoretical questions the maintenance of observatories with continuously recording instruments appears of far greater importance than the execution of frequent surveys, and it seems to us that the needs of science will be satisfactorily met by bringing the survey up to date at the sunspot minimum of about 1935 or 1946* and by maintaining an adequate number of observatories in continuous operation. It will probably be found sufficient to observe in two successive years at all the present repeat stations† and to make comparatively few observations at field stations except in disturbed areas. If for any special reason a survey is desired at an earlier date the acceptance of these proposals will not prevent this from being done‡.

The maintenance of the observatories will make it possible to give an approximate reply to any queries regarding the magnetic elements at any time at any place in India by interpolating for secular change; and as Toungoo, Kodaikanal and Dehra Dun form an outlying triangle it will presumably suffice if these are maintained; we are therefore of opinion that Barrackpore might be closed without serious loss.

It will be remembered that the maintenance of Alibag is independent of the Magnetic Survey of India.

10 *Desirability of another comparison of the absolute instruments with Europe.*

The intercomparisons of magnetic instruments made by various investigators have shown that considerable differences may exist between the determination of the magnetic elements by various observatory and magnetic survey instruments; these discrepancies frequently largely exceed errors of observation.

It is therefore desirable that the published values of the magnetic elements should be reduced to an international standard so far as this is possible.

The difference between the Indian Survey standard instrument and those of other countries in the determination of the Horizontal Intensity is at present somewhat uncertain, and we think that this should be redetermined at an early date.

GILBERT T. WALKER.

R. H. THOMAS.

J. DE GRAAFF HUNTER.

* In a letter to Lt.-Col. Conyngham, Dr. Chree expresses the impression that the interval in India between two surveys should be not less than 20 years and suggests "33 as practically three average sunspot periods and a third of a century".

† These should be marked in a permanent manner and handed over to the care of the local authorities so that there shall be no question as to their exact position.

‡ One objection to the above proposal is that on the one-inch maps of the Survey of India it is customary to give the declination to the nearest five minutes; and if the published figures are to be really accurate it will be necessary to observe declination at the repeat stations at intervals of five years. If however declination were given to the nearest half degree it would suffice if the interval were ten years.

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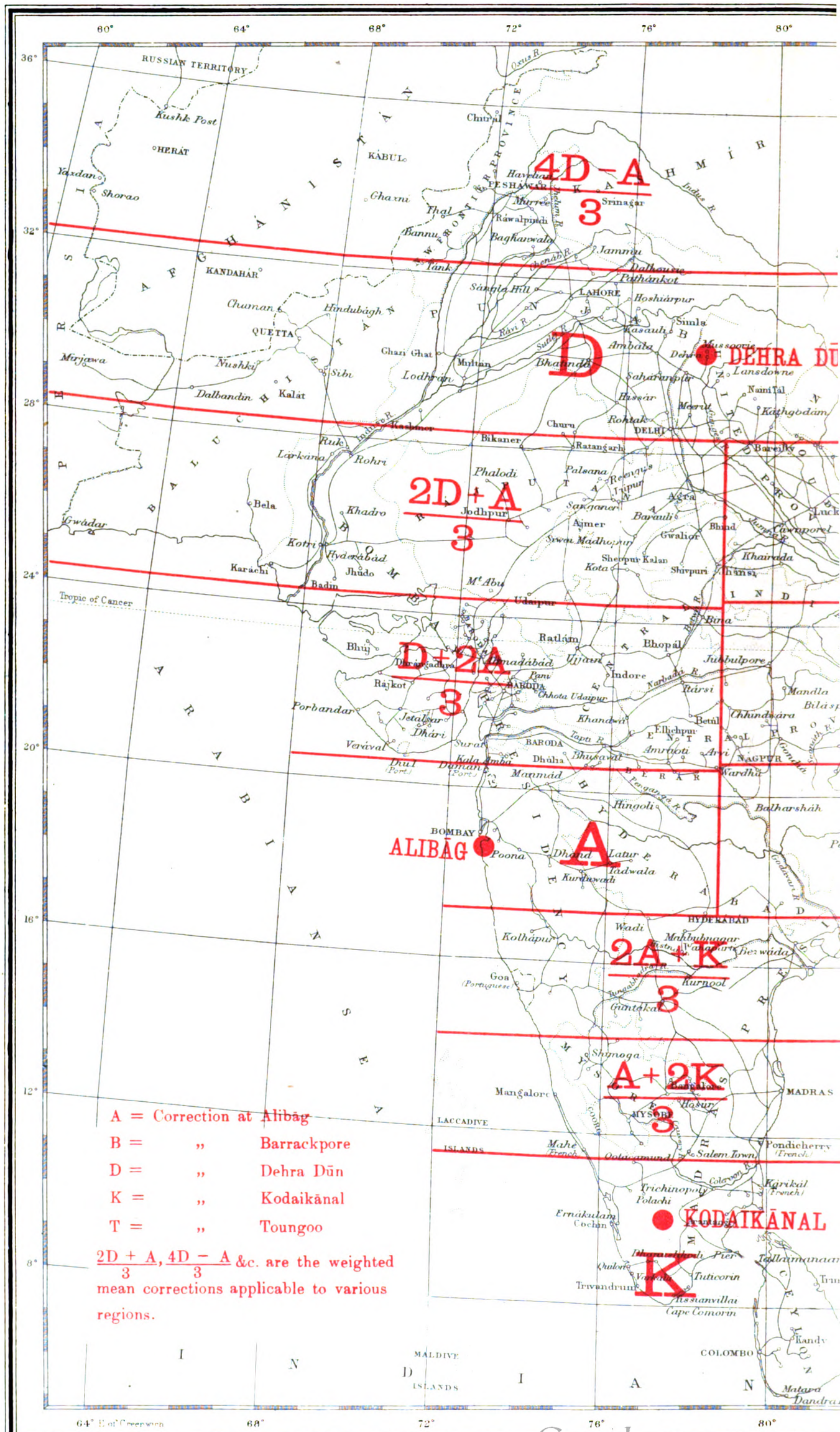
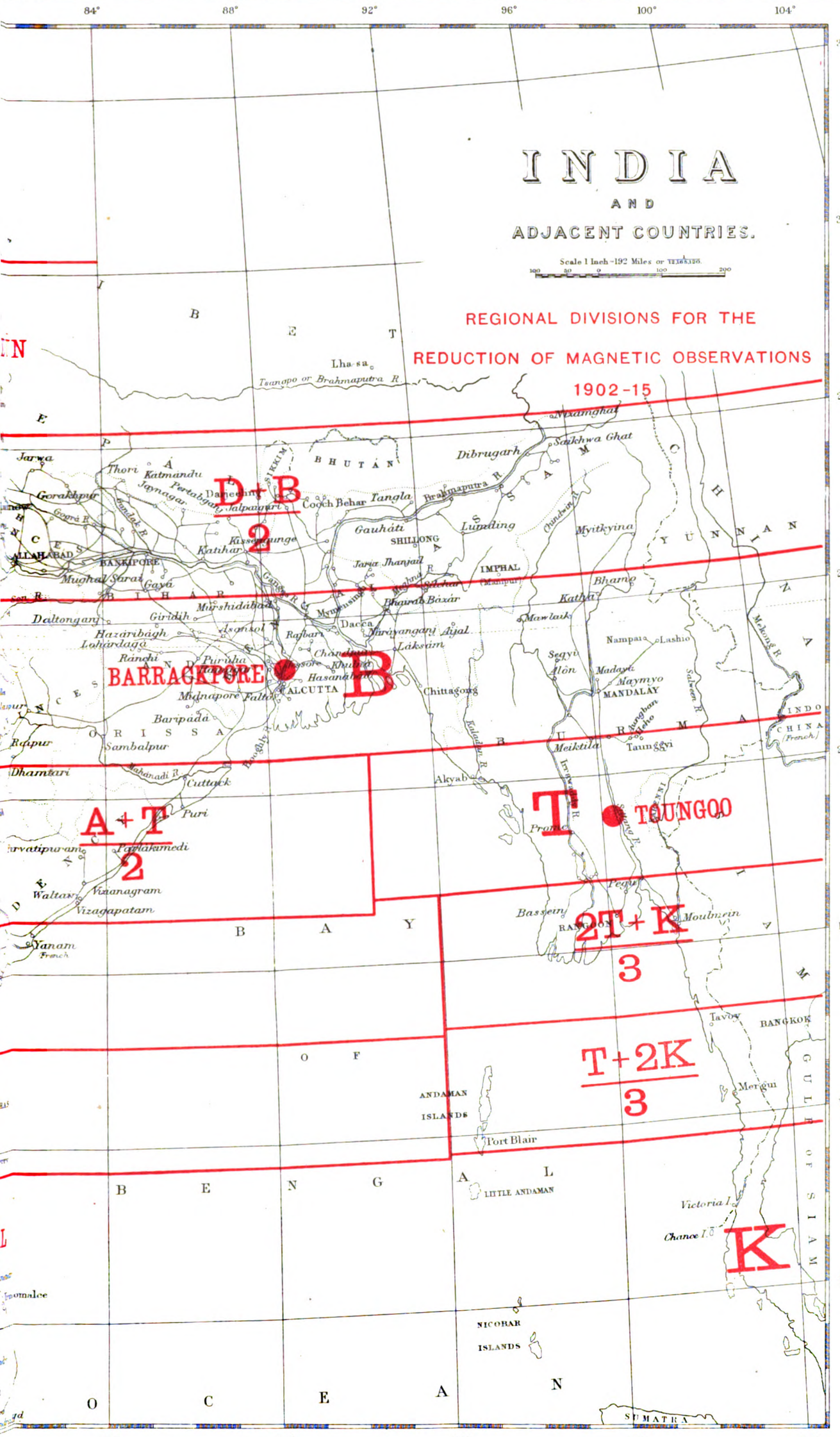

4D − A
3
D
DEHRA DŪN
2D + A
3
D + 2A
3
A
ALIBĀG
2A + K
3
A + 2K
3
K
KODAIKĀNAL
A = Correction at Alibāg
B = „ Barrackpore
D = „ Dehra Dūn
K = „ Toungoo
2D + A / 3, 4D − A / 3 &c. are the weighted mean corrections applicable to various regions.
RUSSIAN TERRITORY
KABUL
KANDAHAR
HERAT
QUETTA
LAHORE
DELHI
BOMBAY
HYDERABAD
MADRAS
BARODA
NAGPUR
COLOMBO
MALDIVE ISLANDS
LACCADIVE ISLANDS
Tropic of Cancer
64° E of Greenwich
Reg. No. 1464 D.D.D 1922 (18 Party) S.I-350
Published under the direction of Colonel C.H.D. Ryde



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C.B., C.I.E., D.S.O., R.E., Surveyor General of India.

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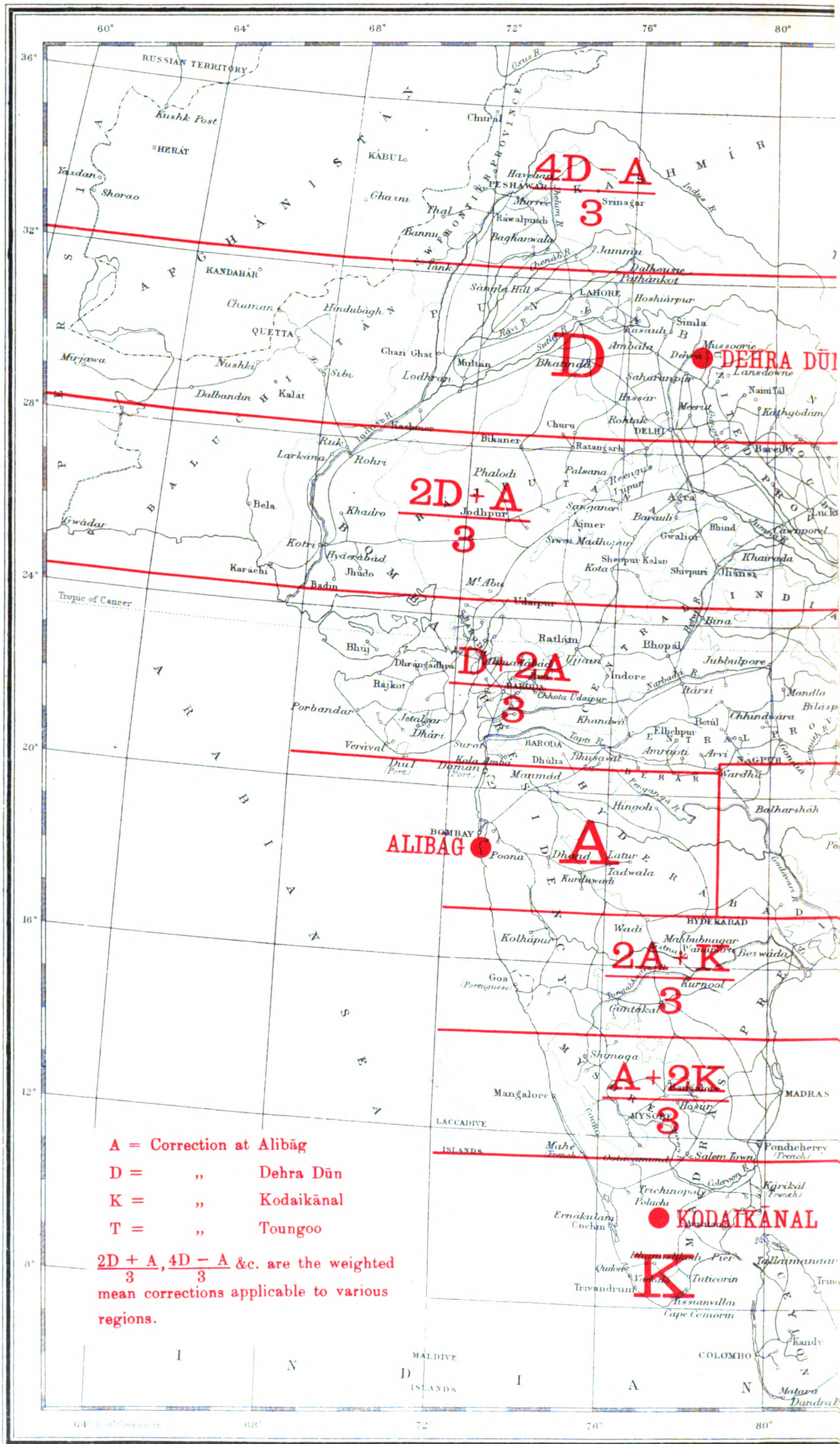

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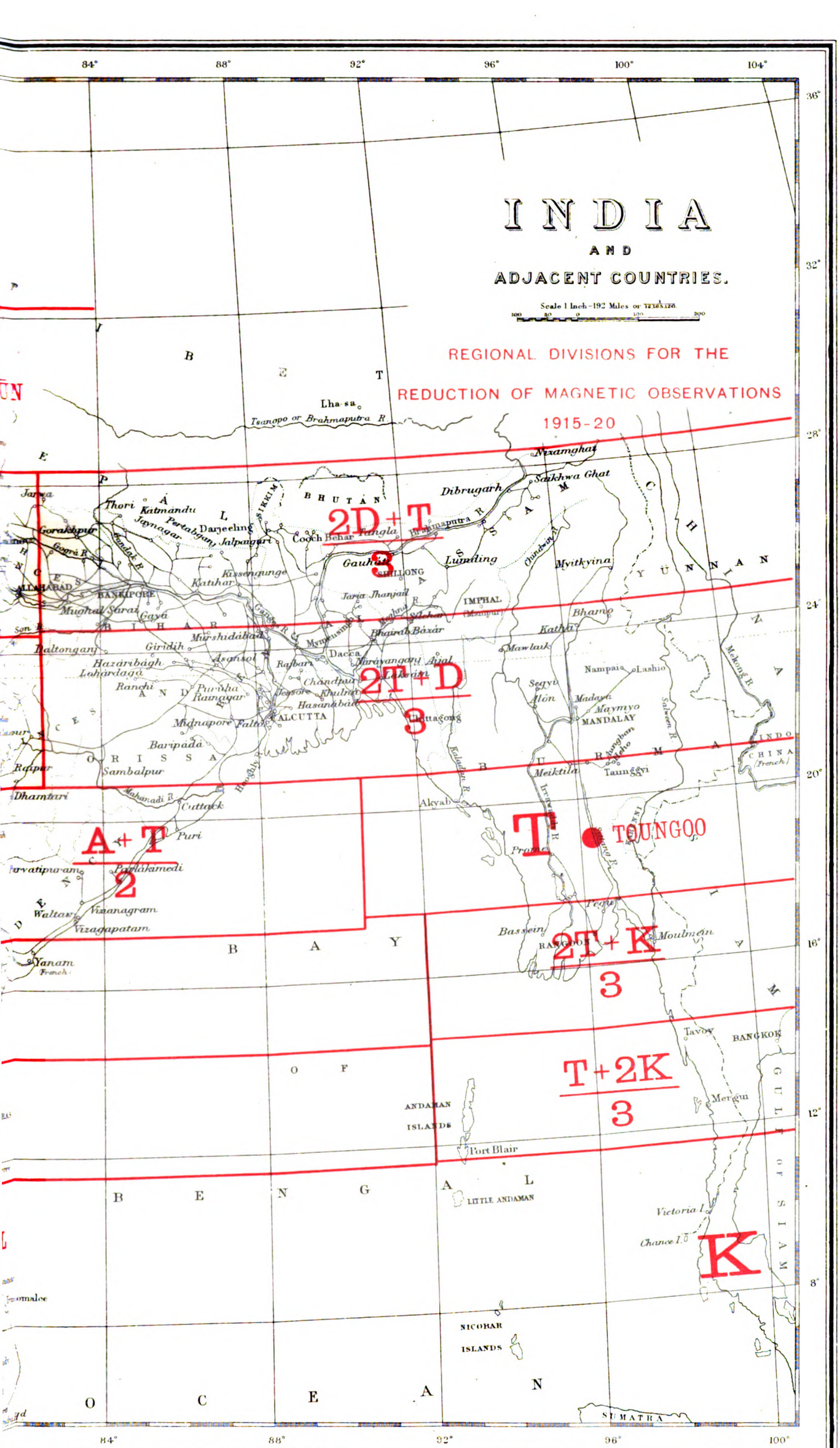

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1922

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PART III
DIAGRAMS AND MAPS

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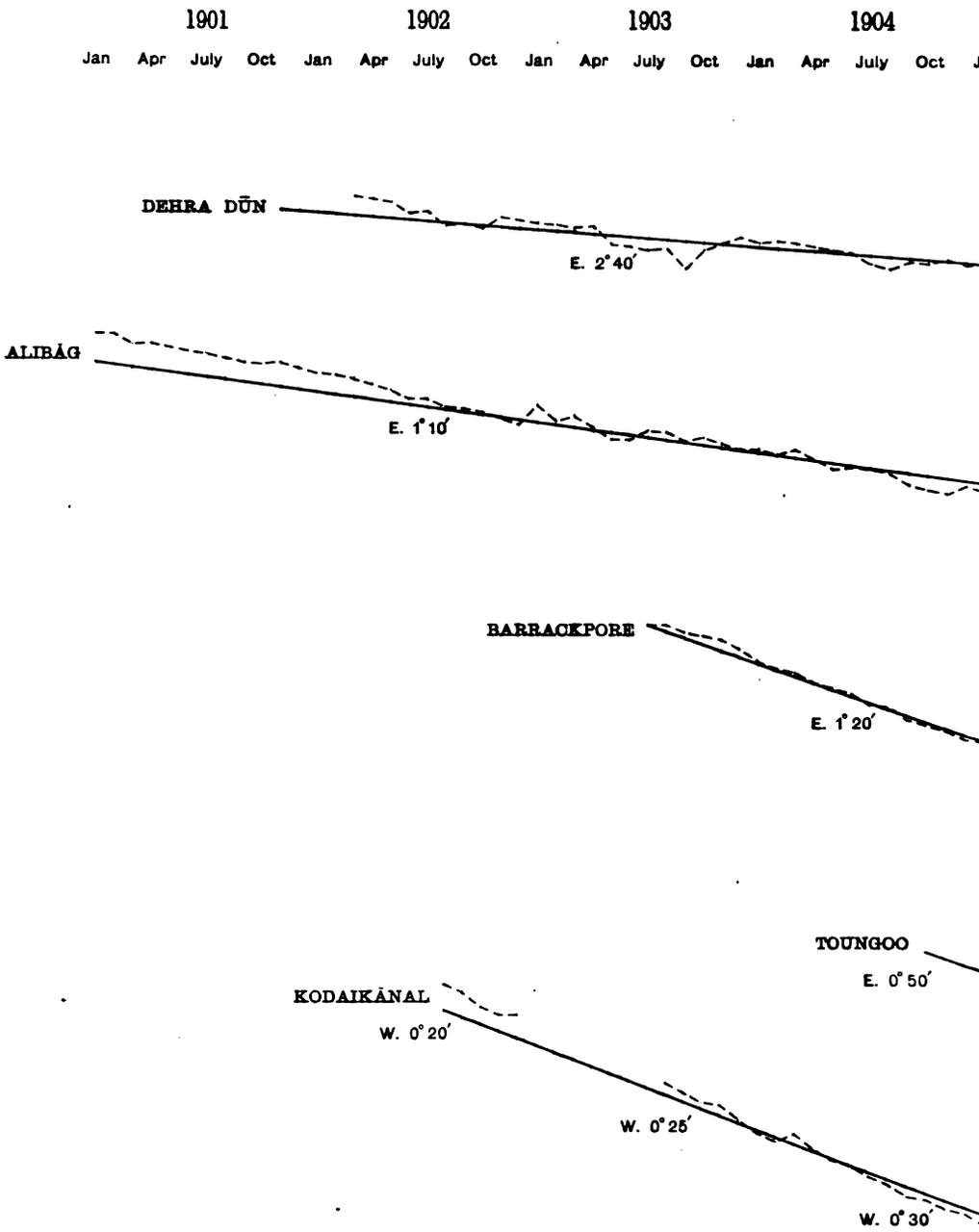

DECLINATION

Monthly Mean Values
and
Annual Change
at
Magnetic Observatories
1901 to 1909

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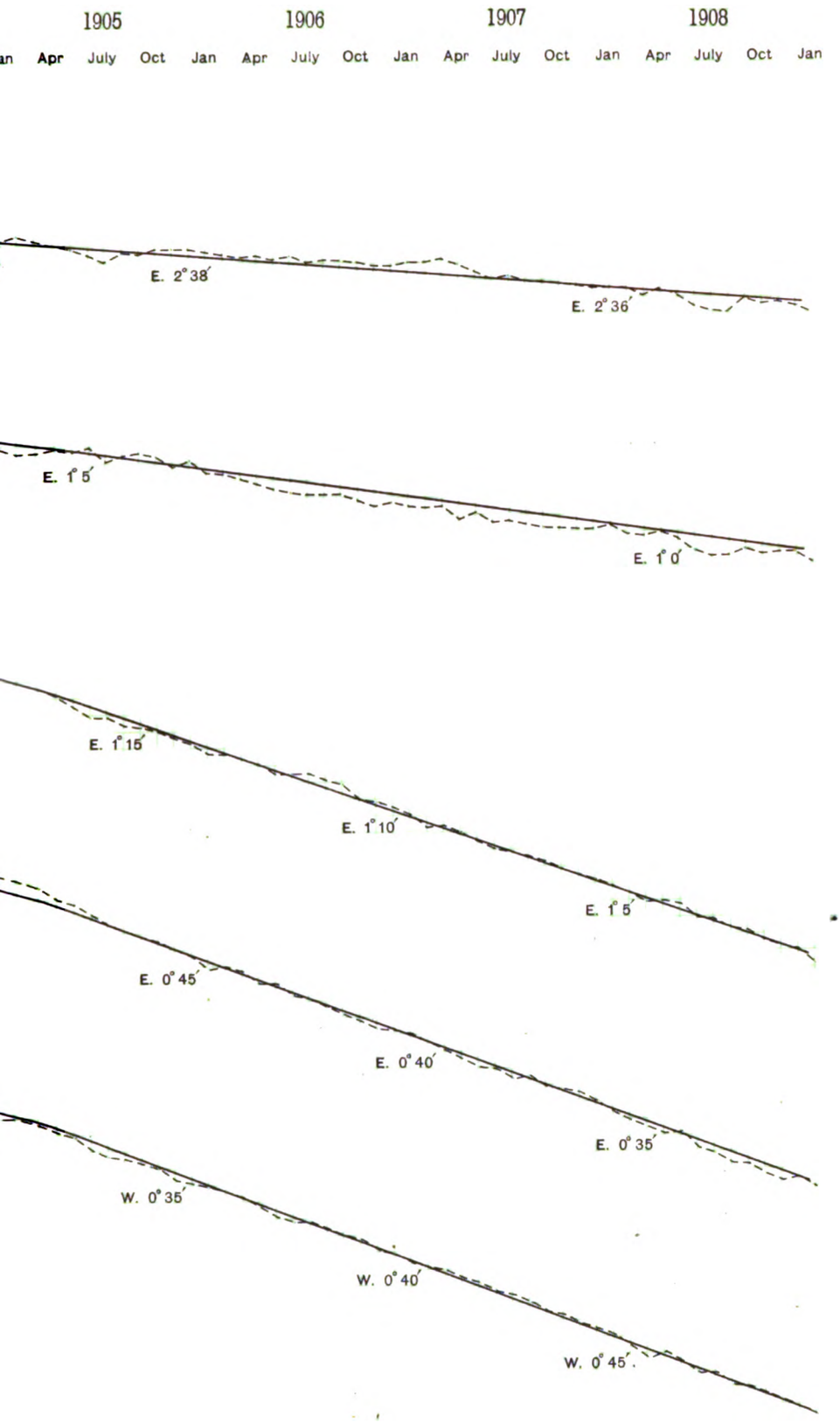

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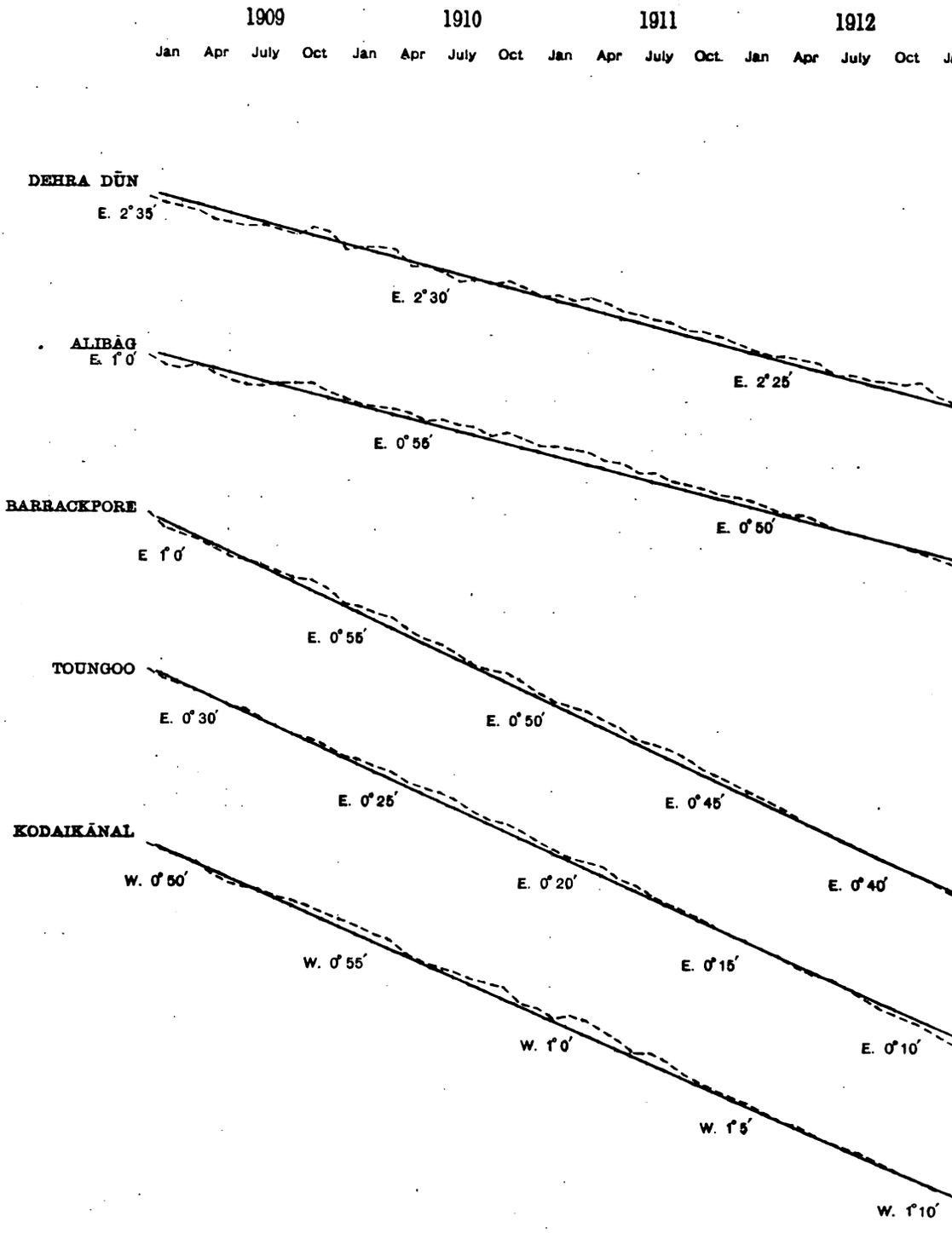

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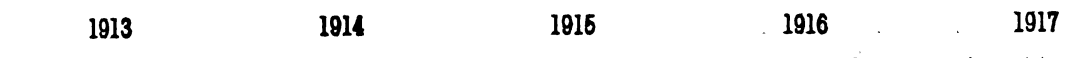
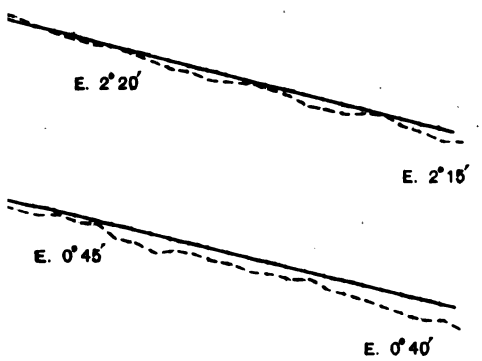
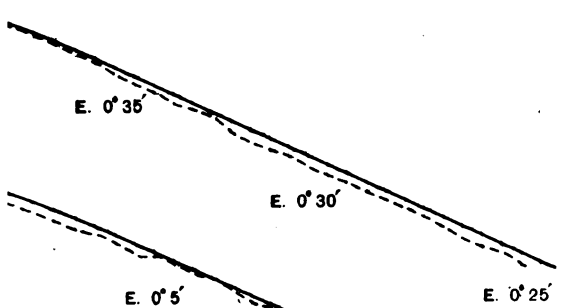
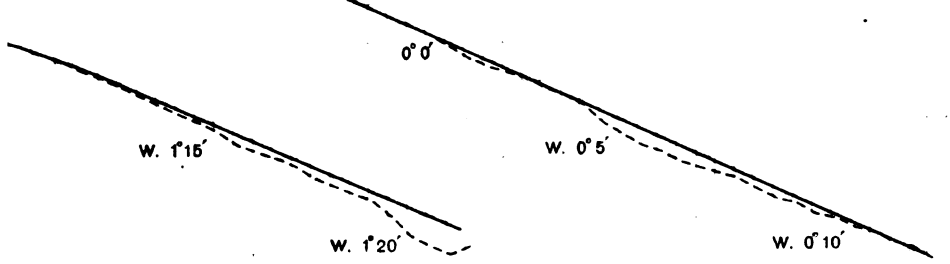


DECLINATION

Monthly Mean Values
and
Annual Change
at
Magnetic Observatories
1909 to 1915







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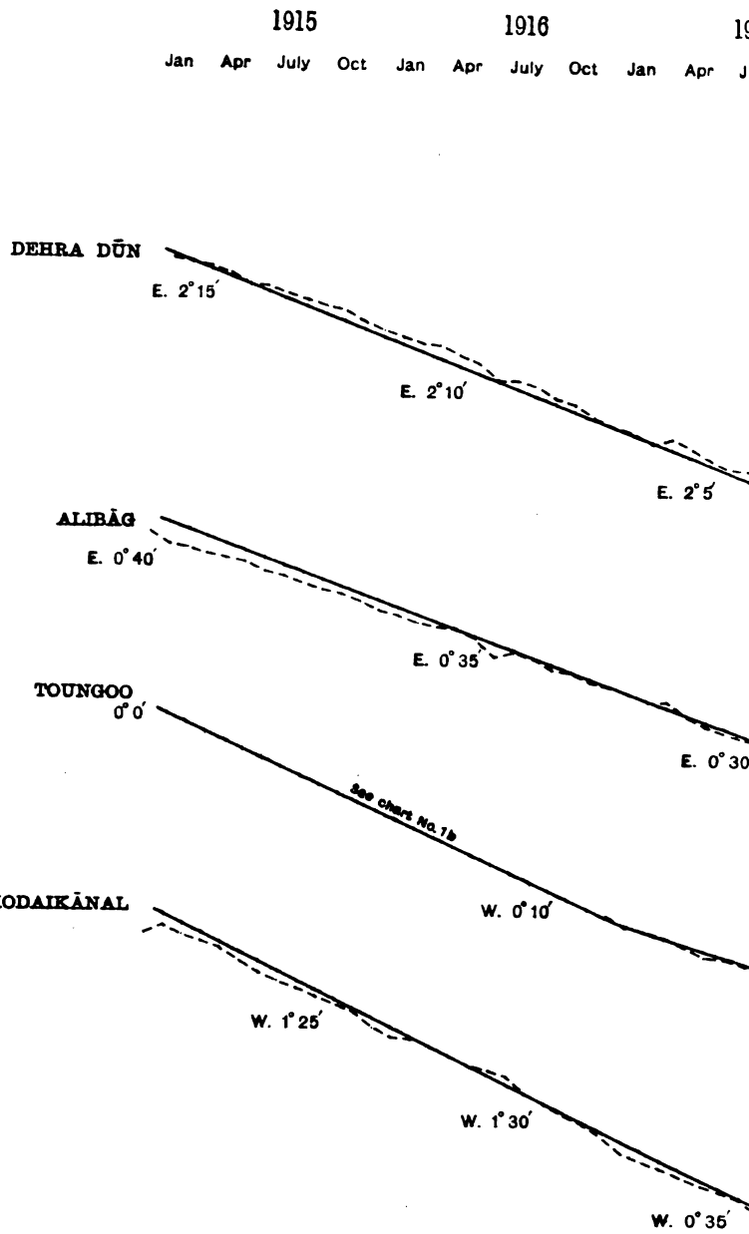

DECLINATION

Monthly Mean Values
and
Annual Change
at
Magnetic Observatories
1915 to 1920

Reg. No. 1463 D D D 1922/18 Party/S I 300

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1922

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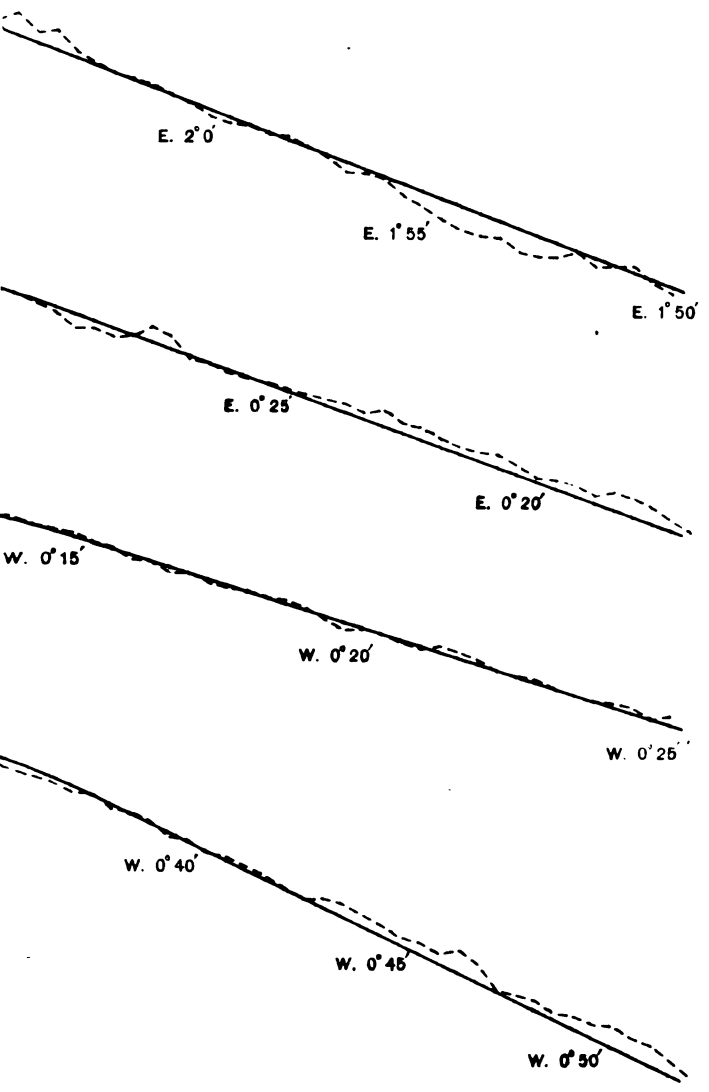
17 1918 1919 1920

July Oct Jan Apr July Oct Jan Apr July Oct Jan Apr July Oct



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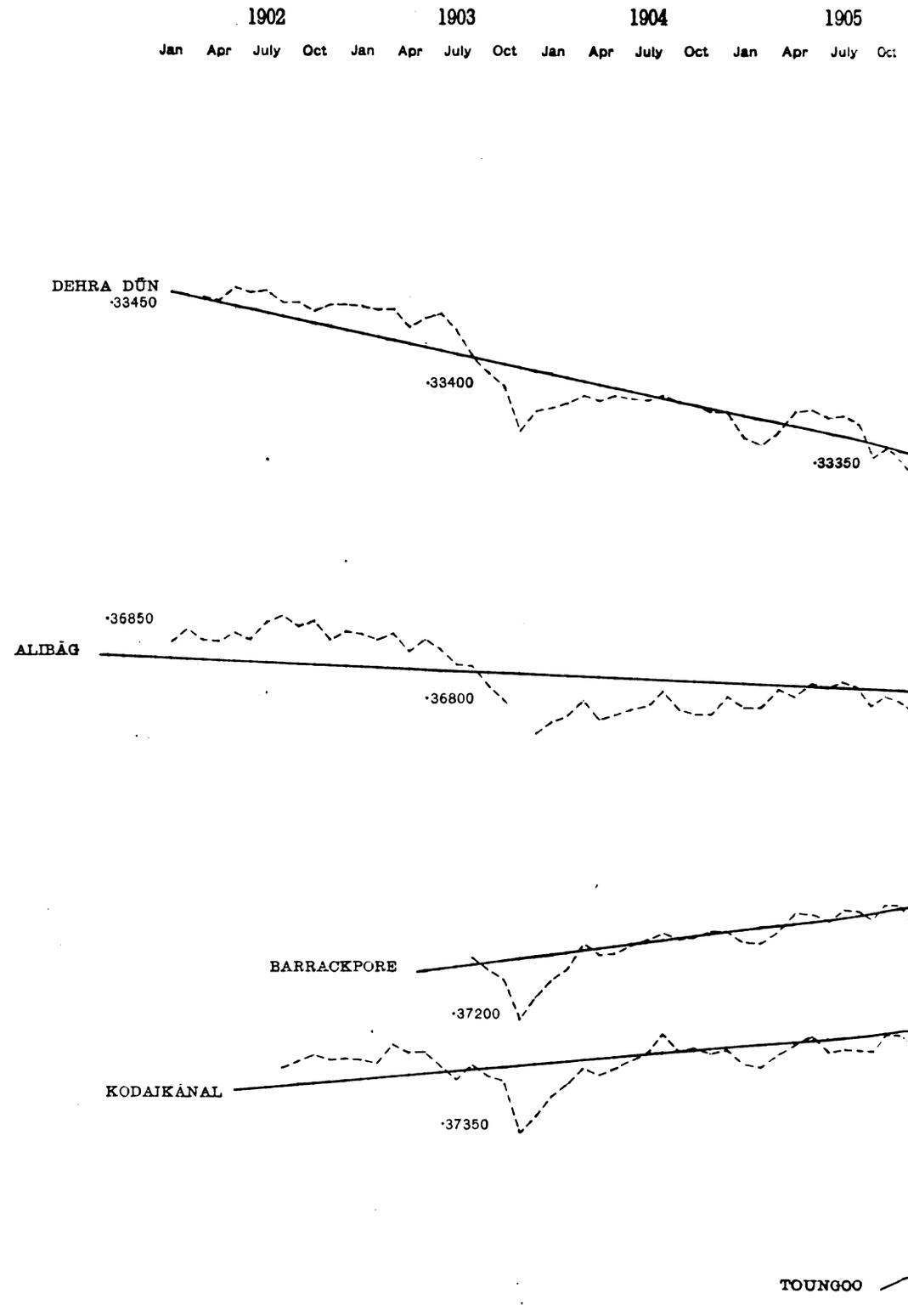

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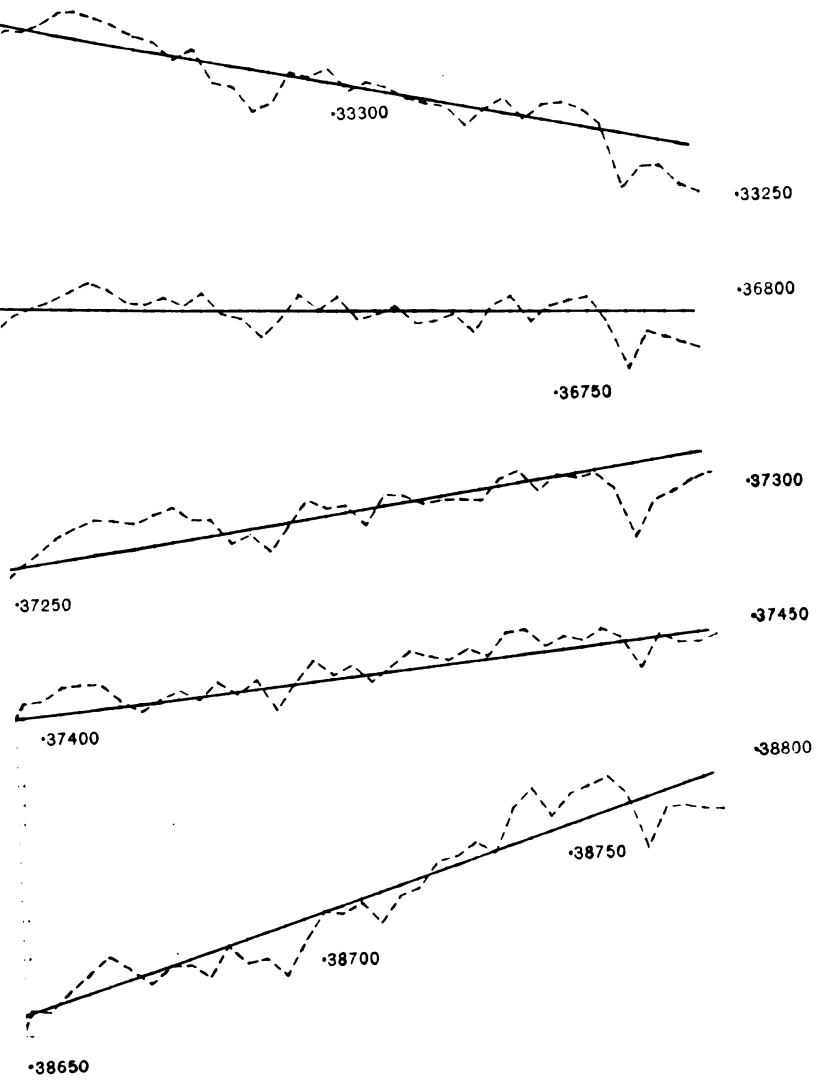
1906 1907 1908 1909

Apr July Oct Jan Apr July Oct Jan Apr July Oct Jan Apr July Oct

HORIZONTAL FORCE

Monthly Mean Values
and
Annual Change
at
Magnetic Observatories
1902 to 1909



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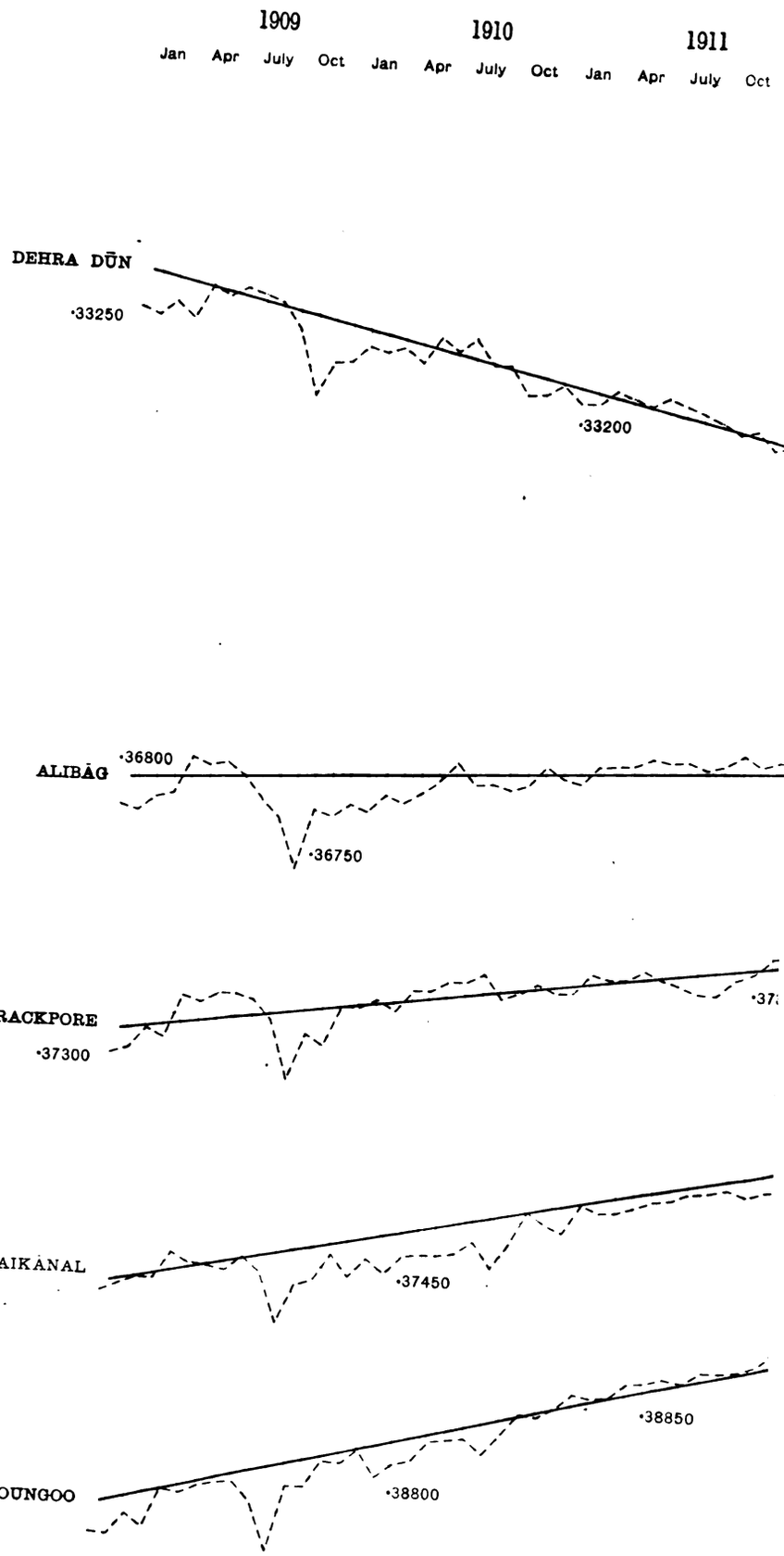

Reg. No. 1443 D.D.D. 1922(18 Parts)5 1 Bb0

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1923

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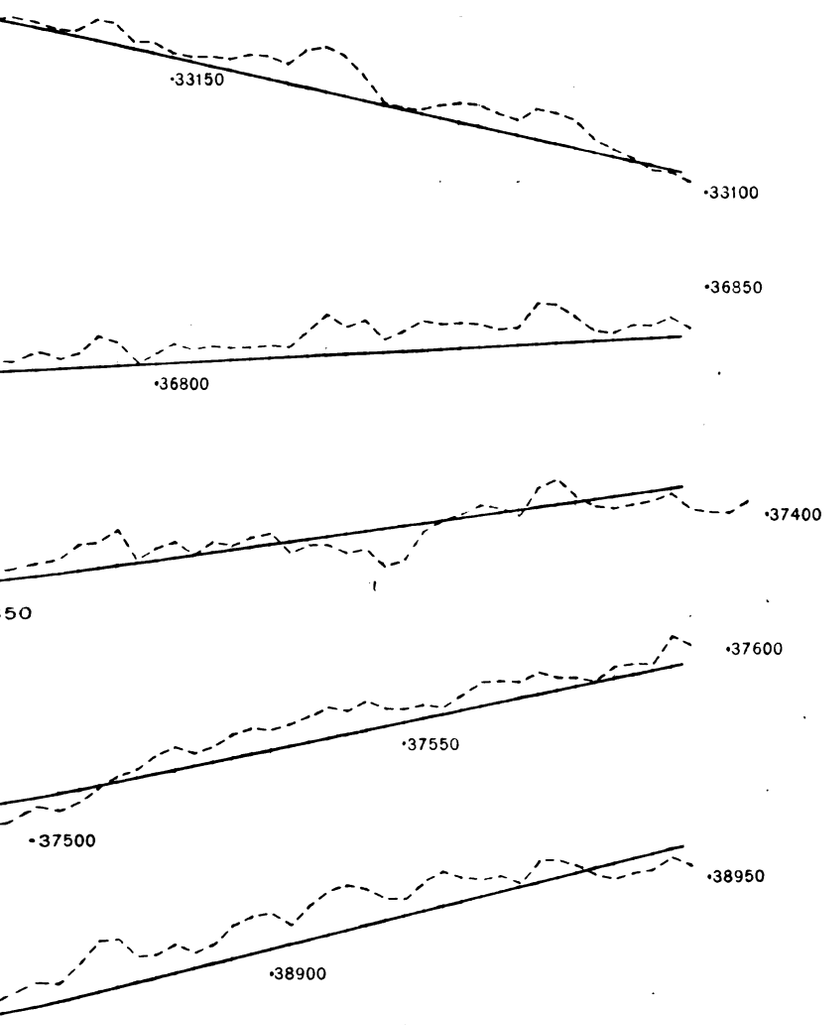
1912 1913 1914 1915

n Apr July Oct Jan Apr July Oct Jan Apr July Oct Jan Apr July Oct

HORIZONTAL FORCE

Monthly Mean Values
and
Annual Change
at
Magnetic Observatories
1909 to 1915



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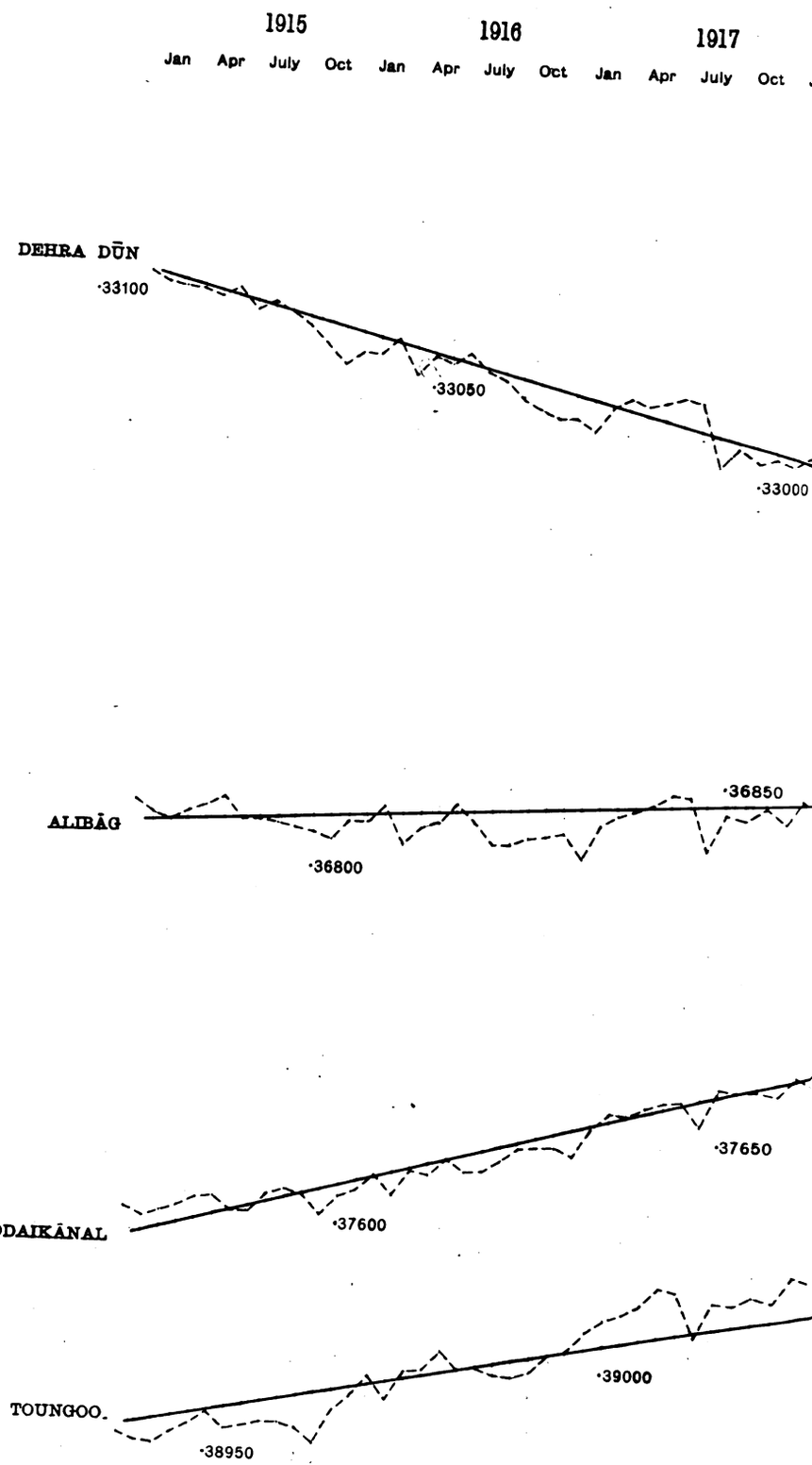

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1922

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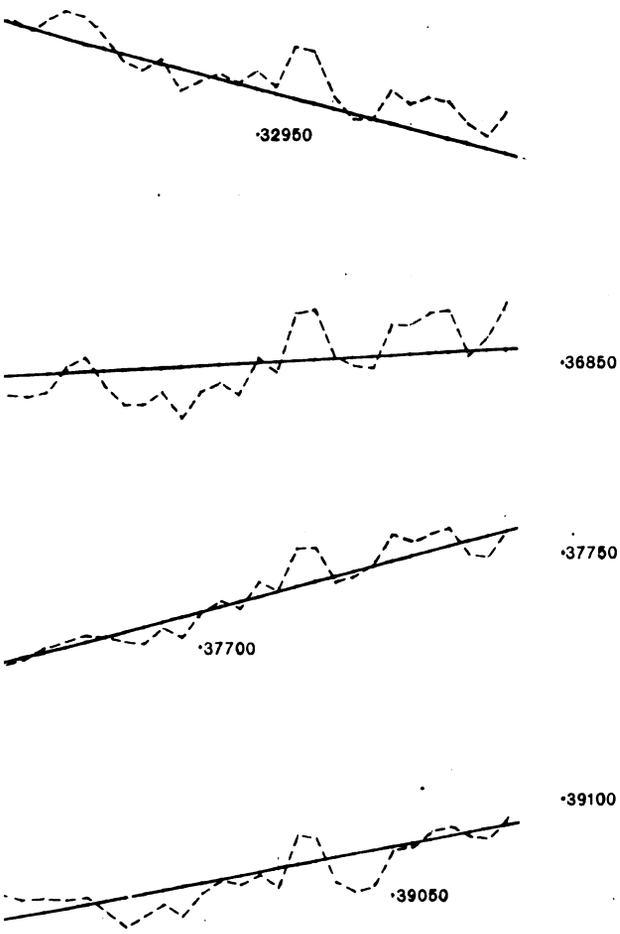
1918 1919 1920

Apr July Oct Jan Apr July Oct Jan Apr July Oct

HORIZONTAL FORCE

Monthly Mean Values
and
Annual Change
at
Magnetic Observatories
1915 to 1920



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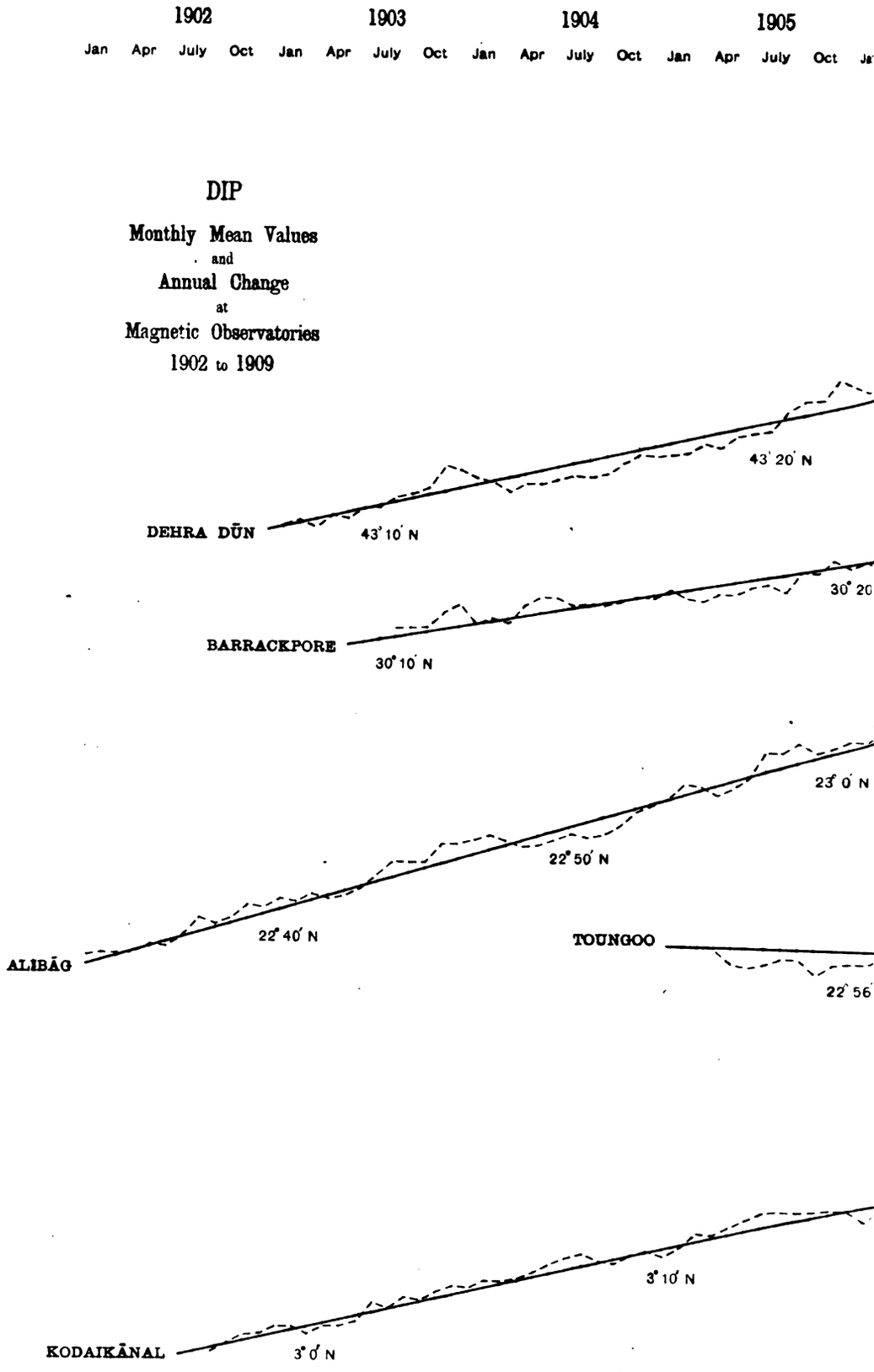

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1922

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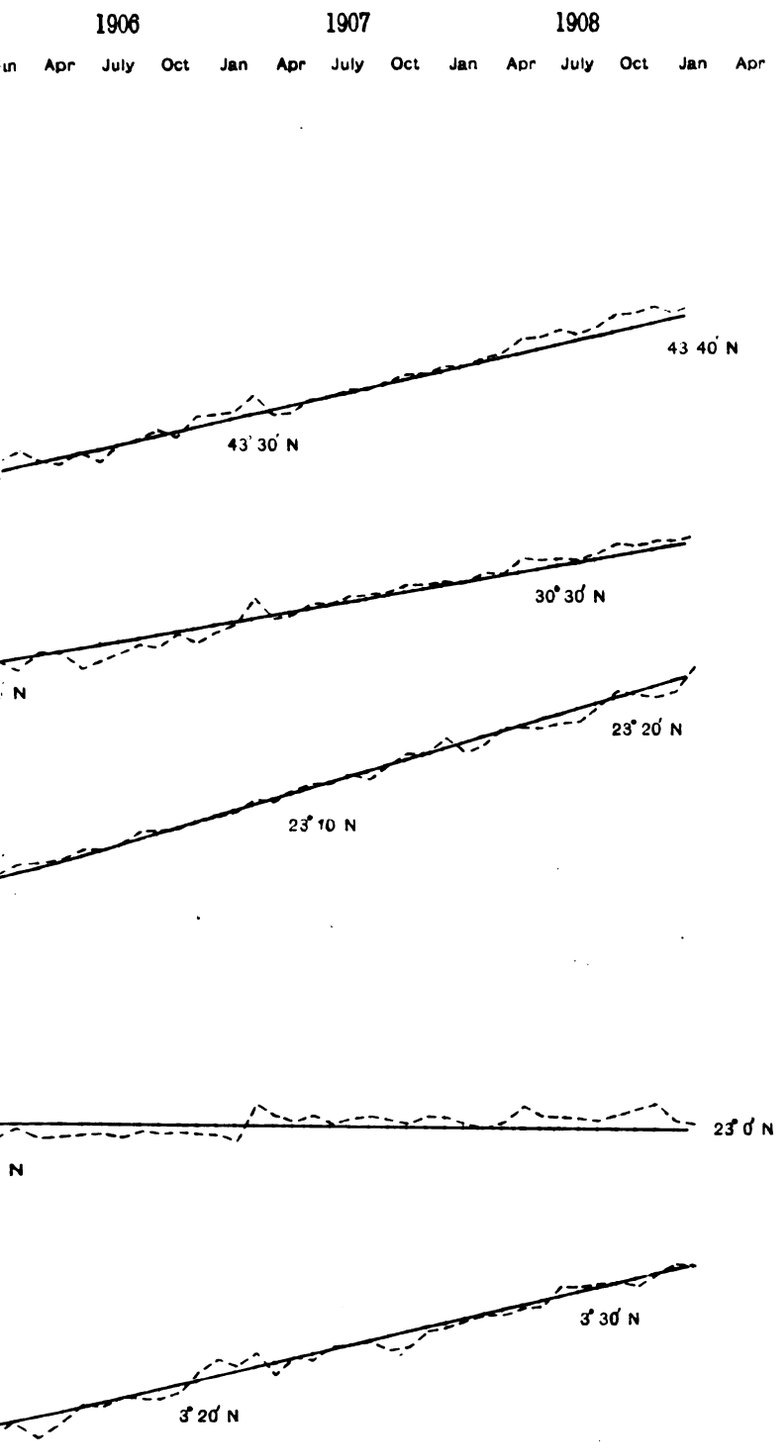

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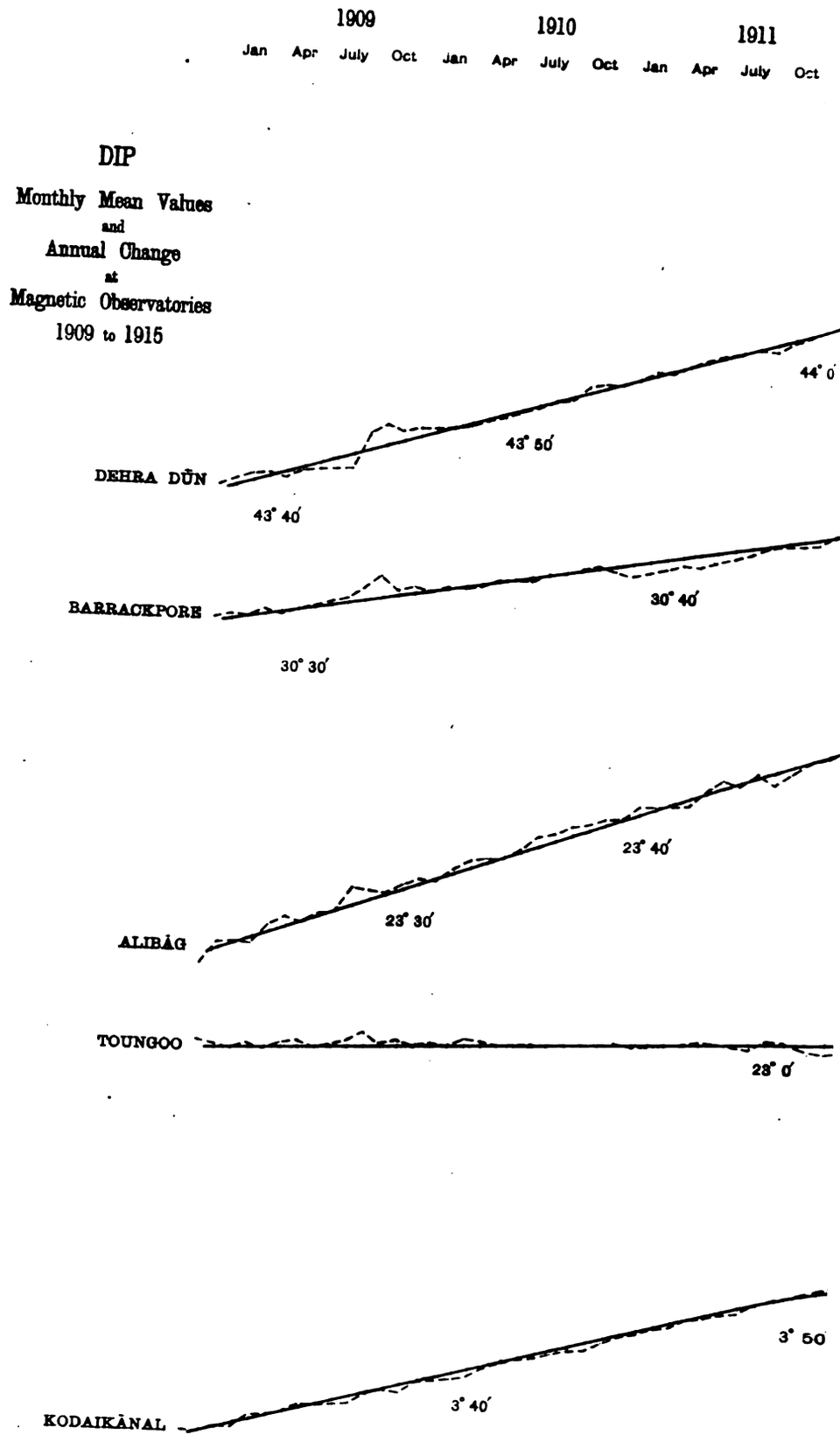

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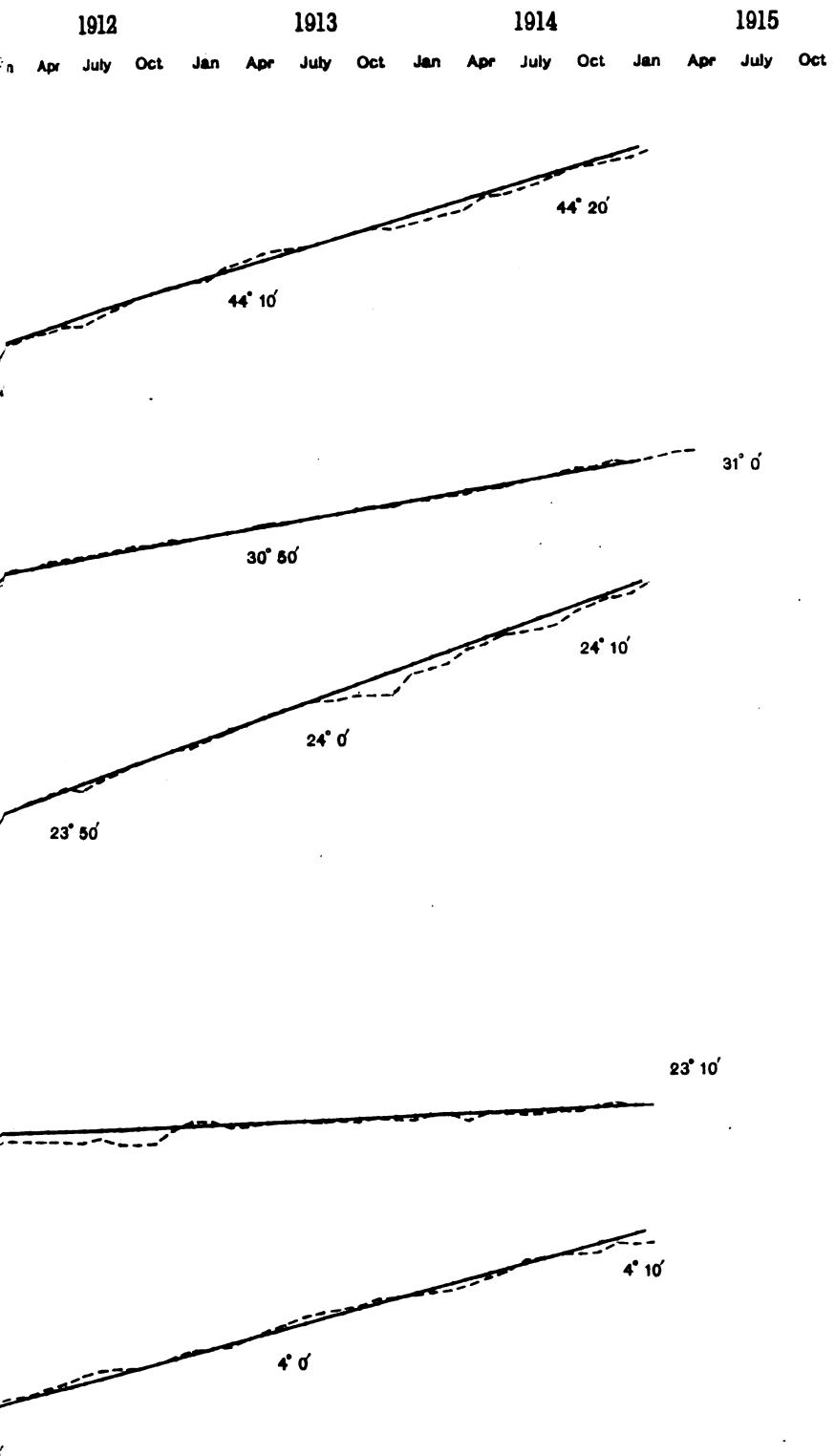

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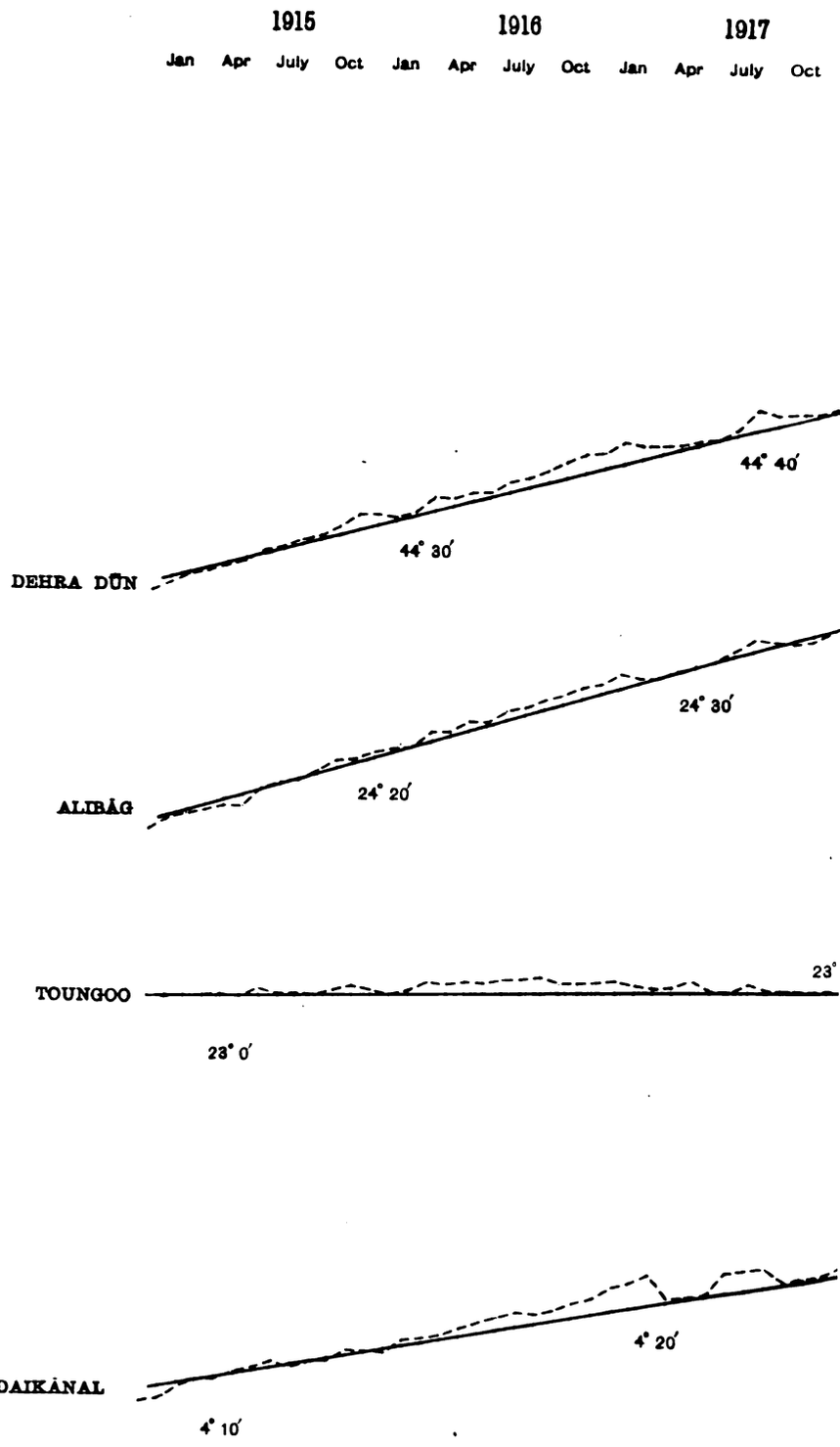

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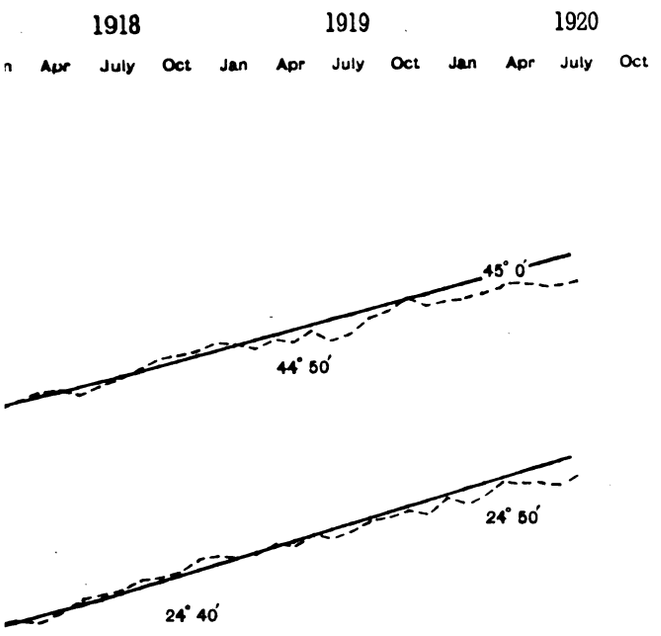

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Monthly Mean Values
and
Annual Change
at
Magnetic Observatories
1915 to 1920

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HORIZONTAL FORCE

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HORIZONTAL FORCE

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MAGNETIC DIP

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TOTAL FORCE

Digitized by Google

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11

TOTAL FORCE

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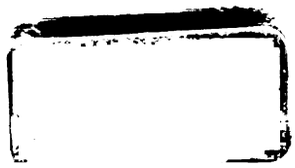

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